Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: February 22, 2019 12:04 PM
To: Tippins, Shawn (INFC)
Subject: [MARKETING] The next Open Sidewalk! Plus, a project update. (22 Feb 2019)

View this email in your browser

Open Sidewalk: Winter Warmer

Save the date! On Saturday, March 2 join us at 307 Lake Shore Boulevard East for our fourth Open Sidewalk. This "Winter Warmer" event is open to the public from 3pm to 7pm.

While the seasons drive the character of how we live in Toronto — trips to the island during the summer or pumpkin parades in the fall — it's no secret that our outdoor activity is severely limited in the winter months. But what if, leveraging design and technology, we could spend more of the year comfortably outdoors?

Our Open Sidewalk #4: Winter Warmer invites you to get a glimpse of what this future could be like. Come to check out prototypes of the "building raincoat" and modular pavement, which could one day melt snow on contact. And stay to participate in winter-themed workshops led by various Toronto-based interactive artists. While RSVP's aren't required, they are encouraged. Hope to see you there!

(Image: Sidewalk Toronto)

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RSVP

Sidewalk Toronto Project Update

Recently, some of what we've been working on has made its way into the media, and so we wanted to directly share with you some new images we released this week as well as explain some key concepts coming into focus for the project. In this medium post, you can read more about Sidewalk Labs' role and business model (ways we would invest in the project and the city, like accelerating the Waterfront LRT, building more affordable housing, and creating more jobs, and ways we would recoup that investment). It also talks about the project's potential scope and scale—when it comes to innovation, infrastructure, and economics—that were raised in Waterfront Toronto's RFP and that we will be exploring in greater depth in our Master Innovation and Development Plan, coming out later this year.

We know that this project is ambitious — to radically improve Torontonians quality of life, it has to be — and over the past year, we've talked to thousands of Torontonians who have asked us good hard questions about this project and raised important concerns. Our CEO Dan Doctoroff wrote an opinion piece for the Toronto Star earlier this week addressing some concerns that arose out of this news. You can read that here. And we'll continue to listen, respond, and shape our plans as we hear more from you.

In the meantime, we are excited about what's coming together and we think you will be too. This project is for Torontonians and ultimately, it will be up to residents, Alphabet, Waterfront Toronto and all three levels of government to decide if it should go forward.

(Image: Sidewalk Labs)

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Accessibility Principles

Over the last year, Sidewalk Labs has engaged with Toronto's active and expert accessibility community and held a number of accessibility-themed co-design sessions and events (like our Open Sidewalk: The Accessible City).

Through this engagement, Sidewalk Labs has developed a draft set of principles grouped into three main areas—General Accessibility, Physical Accessibility and Digital Accessibility—that will guide our work and keep us on track as we plan Quayside. Bringing the community into the design process at the very beginning—and staying engaged with them throughout—will be essential to the project's success.

In that spirit, we'd love to get your feedback on the accessibility principles. Read more about them, and learn how to get in touch, here.

(Image: Jenna Wakani)

The Civic Lab Info Sheets

The Quayside project has prompted a lot of questions about the digital future of cities—questions that aren't easy to answer. This is one reason why Waterfront Toronto, along with its Digital Strategy Advisory Panel, is hosting a series of discussions – called Civic Labs – that bring together some of Canada's leading thinkers and advocates to talk about issues and opportunities in city-building, specifically around the approach to data governance and public policy within Quayside. These discussions help ensure that there's a strong and shared understanding of the issues related to this project.

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To help increase civic literacy and address some questions around these topics and issues, Waterfront Toronto has created a series of Info Sheets that help explain relevant topics, terminology, policies, and regulations. The Info Sheets that are now available on Waterfront Toronto's website:

- Info Sheet 1 explains the ways and places that tech can influence a city.
- Info Sheet 2 focuses on informational laws and regulations.
- Info Sheet 3 looks at data collection and use.

The next Civic Lab meeting will be held on March 4. More details will be available soon.

(Image: Waterfront Toronto)

New Sidewalk Toronto Blog

Sidewalk Toronto is now on Medium! This new blog page is a home for Sidewalk Labs to provide updates, news, and insights on the Sidewalk Toronto project. Recent posts include "Creating a pathway to climate positive communities" by Sidewalk Labs' Director of Sustainability Charlotte Matthews and "Co-designing a more accessible community" by Sidewalk's Accessibility Lead Samara Trilling.

Co-working at 307

Toronto-based startup Flexday has collaborated with Sidewalk Labs to make 307 available for co-working during the building's open hours, on Sundays from 11am to 5pm. This type of co-tenancy, which takes advantage of the flexibility

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of open spaces, is an excellent example of what urban experiences could be like in Quayside.

(Image: Adrien Williams)

What we've been reading

- Eastern Waterfront opinion piece by Sidewalk Labs CEO Dan Doctoroff (Toronto Star)
- Rethinking the tower, innovations for housing attainability in Toronto (Ryerson City Building Institute)
- The benefits of Sidewalk Labs' potential investment in area of Toronto (Toronto Star)
- Applying Canadian innovation to the art of winter (Curbed)
- Delaying Waterfront LRT would cost billions in lost tax revenue, productivity. (Toronto Star)
- More than a century after steel and concrete became the standard for high-rise buildings, timber buildings are making a comeback. (Bloomberg)
- Living well on the waterfront: new research highlights six important trends key to the future of care in urban communities. (Medium)
- Co-designing a more accessible community. (Medium)

(Image: David Pike)

In case you missed it, you can find our full public engagement plan here.
The neighbourhood of the future begins with you.

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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: January 16, 2019 4:15 PM
To: Tippins, Shawn (INFC)
Subject: Your feedback from the last roundtable. Plus, plows and pavers at 307.

View this email in your browser

Roundtable Summary Report

On December 8, 2018, approximately 500 people attended the fourth public roundtable meeting on the Quayside project. This full day meeting was designed to inform the planning process for Sidewalk Labs' draft Master Innovation and Development Plan. Participants provided feedback specifically around: the draft Quayside site plan and transportation; social infrastructure and housing affordability; digital governance; and sustainability.

The key themes that emerged from the meeting's conversations have been outlined in the Summary Report, which you can now read here. You can also download the raw feedback data and survey results from the documents of the Sidewalk Toronto website.

(Image: David Pike)

Autonomous Snowplow Competition

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The Institute of Navigation (ION) is hosting the 9th Annual Autonomous Snowplow Competition at 307, the Sidewalk Labs workspace in Toronto! Teams design snowplows that autonomously remove snow from predefined paths. This year there are eight teams comprised of students from U.S. colleges and universities excited to display their hard work to the people of Toronto.

The public is encouraged to come on Thursday January 24th to see the vehicles and meet the student engineers and developers. Saturday January 26th is competition day, when the students will demonstrate the capabilities of their autonomous vehicles and all the hard work they have put into development over the past six months. Join to cheer on your favourite robotic plow!

ION is also looking for volunteers to assist with the competition — please email Lina Gutzkow of ASTER Labs for more information.

(Image: Christine Altehofen-Sonner)

Recap of Aging Housing Workshop

Last month, Sidewalk Labs and SE Health held a hands-on workshop at 307, "Re-imagining Homes for Seniors," designed to explore what Toronto-based seniors are looking for with regards to housing, care, and community. We heard a strong desire for communities that allow seniors to age in place, as independently as possible. Part of Sidewalk Labs' ongoing collaboration with SE Health's Futures Team, this participatory workshop will inform the housing models presented in the Master Innovation and Development Plan. For greater insight into the workshop, participant Doug Tindal has a great report on his blog (Wine on the Porch).

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(Image: David Pike)

307: Open Hours + New Paver Prototype

The 307 team has updated the Open Hours calendar for 2019. 307 will be open Sundays from 11AM to 5PM. We hope to see you there! More details here.

The team has also started installing a “street of the future” prototype: a series of removable, modular, flexible concrete pavers that can be reconfigured or lit up differently at various times. For example, after rush hour, it could be a traffic lane, while on the weekend, a farmer’s market. The pavers will be open to the public in February — come to 307 to learn more!

(Image: Dasola Dina)

In case you missed it, you can find our full public engagement plan here.
The neighbourhood of the future begins with you.

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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: December 13, 2018 3:00 PM
To: Tippins, Shawn (INFC)
Subject: [MARKETING] Missed the roundtable? You can still have your say. Plus, the Civic Lab report.

View this email in your browser

Did you attend the public roundtable on Saturday?

Thank you for contributing your voice.

On December 8, hundreds of Torontonians attended the fourth public roundtable meeting to learn about and discuss details being considered for the Master Innovation and Development Plan — including a draft site plan of Quayside. During this full-day meeting, participants had the opportunity to attend a plenary presentation and provide feedback in four different breakout sessions focused on: Quayside Site Plan & Transportation, Affordable Housing & Social Infrastructure, Digital Governance, and Sustainability.

If you still wish to participate, all roundtable presentations, videos, and recordings are now available on the Sidewalk Toronto website and YouTube channel. You can watch the presentations, fill out the Roundtable Workbook with your feedback, and email it to hello@sidewalktoronto.ca by December 21.

The questions, comments, and ideas that emerged from our conversations will be outlined in a Summary Report, which we will post in early 2019.

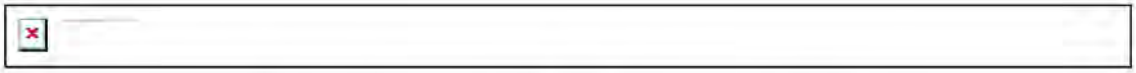
(Image: David Pike)

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Civic Labs Report

On November 23, Waterfront Toronto hosted the first in a series of Civic Lab discussions: seminars on public policy issues related to potential digital elements in the planning of Quayside. At this session, Waterfront Toronto was joined by leaders from government, subject matter experts, academics, and advocates to discuss digital governance. To learn more about the Civic Labs and the key points raised during the first meeting, you can read the Meeting Summary here and check out this blog post. You can also watch the full meeting on the Waterfront Toronto Facebook and YouTube pages.

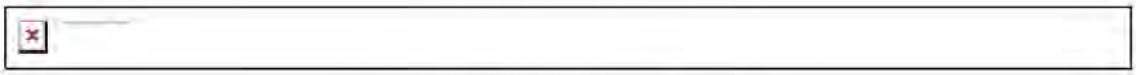
The next Civic Lab discussion will be in early 2019.



New Housing Prototype at 307

What if we could rethink our homes to better fit our day-to-day needs? If we could grow or shrink our apartments as our families grow or contract? Or optimize our units with off-site storage? What if we could ensure the accessibility of our homes — no matter age or ability?

Sidewalk Labs has developed an Efficient Unit prototype, on display at 307 for the next few months, to help bring these design questions to life. Come to 307 to experience the low-fidelity installation, test out the VR to learn more about what it could look like in future, and share your feedback! As we gather your input over time, the prototype will improve and grow richer in detail.



Design Jams Report

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This past fall, Waterfront Toronto and Sidewalk Labs hosted a series of day-long workshops called Design Jams. From September 17-19, community members worked alongside subject matter experts and project team members to explore the possibilities for Quayside and the future of our city. Each of these days had a different theme to explore: Vertical Living, Water Connections, and People on Wheels. The sessions were highly interactive, collaborative, fun, and focused on identifying practical and creative ideas. You can read the summary report here.

Revised Open Hours at 307

Due to the holiday season, 307 has a revised schedule for Open Hours this month:

- **Sunday, December 16:** Open Hours as usual, 12PM - 6PM
- **Wednesday, December 19:** Open Hours as usual, 6PM - 9PM
- **Sunday, December 23:** No Open Hours
- **Wednesday, December 26:** No Open Hours
- **Sunday, December 30:** No Open Hours

The 307 team is working on the Open Hours calendar for 2019. Please check the website for updates.

In case you missed it, you can find our full public engagement plan here.
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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: November 9, 2018 11:30 AM
To: Tippins, Shawn (INFC)
Subject: [MARKETING] Save the date for Roundtable 4! Plus, read our Fellows' report.

View this email in your browser

Mark your calendars!

Roundtable #4 will be December 8!

Our fourth public roundtable will be on **Saturday, December 8th,** from **9AM to 4:30PM,** at the **Metro Toronto Convention Centre**. We will hold a morning session as well as an afternoon session (both with the same agenda). More details will be provided shortly — check out our website, watch your email, or follow us on Twitter or Facebook for updates.

(Image: David Pike)

Sidewalk Toronto Fellows' Report

Our Sidewalk Toronto Fellows have had a busy year. In the spring, these 12 talented, young, and ambitious Torontonians were selected to spend their summers traveling to innovative cities around the world — Amsterdam,

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Copenhagen, Boston, New York, and Vancouver — to learn about waterfront revitalization and the use of technology.

Throughout the fall, the Fellows were crafting recommendations for Sidewalk Toronto that will inform and shape the Master Innovation and Development Plan for Quayside. On Thursday, November 8, they presented their final report, which represents their vision for Quayside and the waterfront. Find it here.

(Image: Dasola Dina)

Recap: Sidewalk Toronto Public Talks

Last month, we held our last Sidewalk Toronto Public Talk of the year — our highest attended yet! Each public talk brought together leading experts from around the world to discuss topics vital to us and the city of Toronto: complete streets, affordable housing, accessibility, and sustainable buildings. If you missed them in-person, livestreams from the evening are available on our YouTube and Facebook pages. And stay tuned for more talks in the new year!

(Image: David Pike)

Kids Camp Report

In July, Sidewalk Toronto, in partnership with the YMCA of Greater Toronto, held three week-long summer camps for children aged 9-12. Campers took field trips to different sites in downtown Toronto, participated in activities to

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learn about city planning and technology, and swam and played at the new Cooper Koo Family Cherry Street YMCA.

Throughout the week, campers reflected on what they value most in their communities and shared their ideas and designs for their ideal waterfront neighbourhood. You can get a summary of the curriculum and see what the kids learned in our Kids Camp Report.

Open Hours at 307

307 is the central office and experimental workspace for Sidewalk Labs in Toronto. Stop by 307 on Wednesdays (6PM to 9PM) and Sundays (12PM to 6PM) to ask questions and learn about our explorations and ideas for Quayside. Find more information here.

(Image: Sidewalk Toronto)

Plan Your Neighbourhood!

We've been excited to explore a new data-driven approach to urban planning known as "generative design." To bring this approach to the public, we designed a tool, the Plan Your Neighbourhood prototype, that allows visitors to explore design choices, such as the orientation of a street grid, or the percentage of parks in a district, and see first-hand what it's like to generate plans, evaluate how well they perform, and weigh trade-offs.

From October 10-12, we sent our prototype to the Smart Cities Summit, held by

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the Toronto Region Board of Trade at First Canadian Place. Over the three-day pop-up, several hundred community members stopped by our interactive booth to engage with the tool and learn more about the Sidewalk Toronto project. We love finding opportunities to bring our innovations to you — keep your eye on our website for future pop-up events!

(Image: Sidewalk Toronto)

There are many more ways to join

There are dozens of opportunities throughout 2018 to join the Sidewalk Toronto conversation. You can read our full public engagement plan here or visit the Sidewalk Toronto website for more information. We need your help to co-create the neighbourhood of the future.

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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: October 12, 2018 12:01 PM
To: Tippins, Shawn (INFC)
Subject: Your feedback from Roundtable 3. Plus, the Residents Reference Panel Interim Report.

View this email in your browser

(Image: David Pike / Sidewalk Toronto)

We heard what you care about

On August 14 and 15, approximately 460 people attended our third public roundtable meeting, which took place over two consecutive nights. At this meeting, we shared emerging thinking from our teams and gathered feedback, specifically around: public realm, streets, and buildings. The key themes that emerged from our conversations have been outlined in the Summary Report, which you can now read here. You can also download the raw feedback data and survey results from the documents section of our website.

Our next public roundtable meeting will take place in early December. Details coming soon!

(Photo: David Pike / Sidewalk Toronto)

Our Residents Reference Panel Interim Report

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In the spring, we created the Sidewalk Toronto Residents Reference Panel to help ensure that a broad representative group of Toronto residents would have the opportunity to articulate a vision for Quayside that will serve the best interests of all Torontonians. The panel, made up of 36 randomly selected residents, generously agreed to spend over 40 hours learning about the project, exploring the issues facing the Greater Toronto Area, and creating recommendations on the potential redevelopment of Quayside.

The panel has produced their recommendations in an interim report that can be read here. The panel will reconvene for their final meeting in early 2019 and publish their final report soon after.

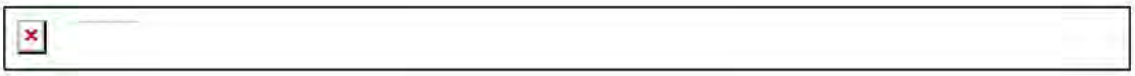


(Image: Harry Choi)

Update: Design Jams

As part of the public engagement process, we wanted to create opportunities for Torontonians to identify practical and innovative ideas that could inform the Master Innovation and Development Plan. From September 17-19, we hosted a series of workshops, called Design Jams, which allowed nearly one hundred community members and subject matter experts to work alongside our project team members to examine the following topics: vertical living, water connections, and people on wheels. Read a recap of the Design Jams here.

Presentation materials from each of the workshops, along with the ideas and suggestions generated by participants, will be summarized and posted on the Sidewalk Toronto website. Stay tuned!



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(Image: Sidewalk Toronto)

Update: Neighbourhood Association Meetings

On October 1, we provided an update on the Quayside project to the Gooderham and Worts Neighbourhood Association, which represents the residents of Toronto's Distillery District. Following the presentation, the residents were given the opportunity to provide feedback and ask questions. Visit the Sidewalk Toronto website to see the summary notes and presentations from this and other past neighbourhood meetings.

If your neighbourhood association is interested in having project team members present at an annual meeting, please send a request to hello@sidewalktoronto.ca.

(Image: Sidewalk Toronto)

Want to be a test user for urban tech?

Digital tools are increasingly shaping our cities, and lives, but too often they are conceived, designed, and tested in a bubble. To tackle this issue, Sidewalk Labs has partnered with Code for Canada and Civic Hall Toronto to launch a civic user testing group of Torontonians who will engage in the creation of more inclusive and accessible urban tech. If you're interested in getting involved, check out the GRIT website.

Mark your calendars!

As we refine our public engagement calendar, make sure to check Sidewalk Toronto for the latest details on times and locations.

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- **307 open hours**: Wednesdays 6–9 p.m. and Sundays 12–6 p.m.
- **Oct 16**: Public Talk: The future of sustainable buildings
- **Nov 13**: Neighbourhood Meeting at Bay Cloverhill Community Association
- **December TBC**: Public Roundtable #4. Details coming soon.

There are many more ways to join

There are dozens of opportunities throughout 2018 to join the Sidewalk Toronto conversation. You can read our full public engagement plan here or visit the Sidewalk Toronto website for more information. We need your help to co-create the neighbourhood of the future.



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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: September 19, 2018 9:33 AM
To: Tippins, Shawn (INFC)
Subject: [MARKETING] Join us Saturday as we imagine a more accessible city. Plus, the 10 small grant winners are...

View this email in your browser

(Image: Sidewalk Toronto)

You're invited to the next Open Sidewalk!

Throughout September, Sidewalk Labs' Toronto workspace will be home to a variety of events and conversations centred around accessibility — including our next Open Sidewalk! Join us at 307 Lake Shore Blvd East on September 22 any time between 12 and 6 p.m. for presentations, prototypes, and yummy Market 307 options. We welcome you to take part in co-creating a neighbourhood that can work for everyone.

You can read our full 307 Accessibility Guide here and a screen reader version is available here. Please reach out to our team at 307@sidewalktoronto.ca should you have any questions about accessibility at 307.

RSVP for Open Sidewalk

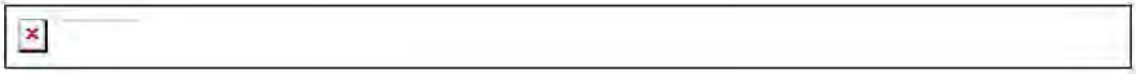
(Photo:OCADU / IDRC)

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Accessible City Hackathon

In partnership with the Inclusive Design Research Centre at OCAD University, Sidewalk Toronto is hosting an accessibility hackathon on Friday September 21 (find project descriptions here). If you're an engineer, product designer, or have lived experience in accessibility & inclusive design you are invited to build and test prototypes.

Sign up for hackathon



(Image: Sidewalk Toronto)

The future of sustainable buildings

Our series of public talks, panel discussions between experts on major issues facing cities, are back! Our next talk is all about sustainable buildings.

If you're interested in attending this talk, please join us at 307 Lake Shore Blvd E. on October 16, from 7 to 9 p.m. Those who can't attend will still be able to watch the live-stream through our YouTube or Facebook channels.

RSVP for Public Talk #4

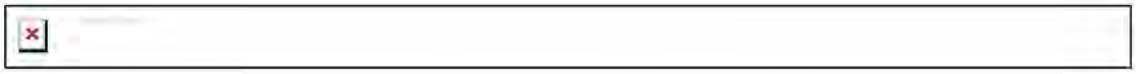


(Image: Sidewalk Toronto)

Update: Small Grants Program

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Thank you to the all the Ontario-based researchers who submitted proposals to our Small Grants Program! We have selected 10 great projects across a variety of subject areas, including active transportation, modular construction, and waste diversion. Find the complete list of funded projects, along with the associated universities, here.



(Image: David Pike)

What we've been reading

- Waterfront Toronto is creating parks that serve an ecological function, but also allow urban dwellers to connect with nature. (Globe and Mail)
- Four University of Toronto students travel the world as Sidewalk Toronto Fellows to help shape a vision for the city's waterfront. (UofT News)
- A neighbourhood hub, a linear park, and more! These community initiatives will make better use of public spaces across Toronto. (Star)
- How social media is influencing the way we interact with Canadian transit agencies. (Globe and Mail)
- Canada's "majority-minority" cities struggle to create public spaces that express the diversity of their communities. (The Guardian)

Mark your calendars!

As we refine our public engagement calendar, make sure to check Sidewalk Toronto for the latest details on times and locations.

- **307 open hours**: Wednesdays 6–9 p.m. and Sundays 12–6 p.m.

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- **Sept 21**: Accessible City Hackathon with OCADU (Sign-up here)
- **Sept 22**: Open Sidewalk: The Accessible City
- **Sept 24**: Data-driven urban design, with Toronto Women's Data Group
- **Sept 26**: Public Talk: The future of more accessible cities
- **Oct 16**: Public Talk: The future of sustainable buildings

There are many more ways to join

There are dozens of opportunities throughout 2018 to join the Sidewalk Toronto conversation. You can read our full public engagement plan here or visit the Sidewalk Toronto website for more information. We need your help to co-create the neighbourhood of the future.



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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@mail7.mcsignup.com> on behalf of Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: September 17, 2018 3:26 PM
To: Tippins, Shawn (INFC)
Subject: [MARKETING] Sidewalk Toronto: Subscription Confirmed



Your subscription to the Sidewalk Toronto list has been confirmed. Thanks for joining us!
The neighborhood of the future starts with your ideas.

For your records, here is a copy of the information you submitted to us...

- **Email Address*:** shawn.tippins@canada.ca
- **First Name (Optional):**
- **Last Name (Optional):**
- **Postal Code (Optional):**

If at any time you wish to stop receiving our emails, you can:
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You may also contact us at:
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Cariaga, Flordeliza (INFC)

From: Sidewalk Toronto <hello@mail3.mcsignup.com> on behalf of Sidewalk Toronto <hello@sidewalktoronto.ca>
Sent: September 17, 2018 3:25 PM
To: Tippins, Shawn (INFC)
Subject: Sidewalk Toronto: Please Confirm Subscription



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INFC – Executive Correspondence
Correspondance de la haute direction – INFC

Date Sent / Date d'envoi : July 24

Received / Reçu : July 24

Branch / Direction générale: IPI

Action: Draft reply

Keyword / Mot clé : Innovation

Due Date / Échéance : September 4, 2018

Signature of / de : Minister Champagne

Comments / Commentaires:

Initials / Initiales : [redacted]

WebCIMS#: 2018IC 48129

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ATIA - 19(1)

St-Arneault, Maxime (INFC)

From: [redacted]
Sent: July-24-18 1:02 PM
To: Executive Correspondence / Correspondance exécutive (INFC)
Cc: Pettipas, José (INFC); Simpson, Brook (INFC); Agbasi, Chike (INFC); Howell, Alexandra (INFC)
Subject: Fw: Letter to Minister Champagne
Attachments: SNY-HY-27-N18072319030.pdf

Please prepare a response from the Minister

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Simpson, Brook (INFC) <brook.simpson@canada.ca>
Sent: Tuesday, July 24, 2018 12:43 PM
To: Pettipas, José (INFC); O'Leary, Leslie (INFC); Burton, Mike (INFC); Bélanger4, Mathieu (INFC); Agbasi, Chike (INFC)
Subject: FW: Letter to Minister Champagne

FYI

From: [redacted]
Sent: July-24-18 11:52 AM
To: Simpson, Brook (INFC) <brook.simpson@canada.ca>
Subject: Letter to Minister Champagne

Hi Brook,

I hope this finds you well. Please find attached a congratulatory note from Dan Doctoroff our CEO to Minister Champagne. If you could pass this on to him, I would be greatly appreciative.

Thank you,
[redacted]

--
[redacted]

SIDEWALK LABS
c [redacted]
e

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New York, NY 10001

sidewalklabs.com
212-373-0800

SIDEWALK LABS

The Honourable Francois-Philippe Champagne
Minister of Infrastructure and Communities
180 Kent St, Ottawa, Ontario, Canada
K1P 5P5

Dear Minister Champagne,

Congratulations on your recent appointment as Minister of Infrastructure and Communities. Sidewalk Labs supports your government's objective to make Canada a great place to invest and build jobs for the middle class — and we look forward to working together with you to achieve this.

Our mission as a company is to dramatically improve quality of life for people in cities by combining digital technology and forward-thinking urban design. Growing cities face many challenges: longer commutes, higher rents, and unevenly distributed economic opportunities.

We are working to tackle these challenges on Toronto's waterfront through a project called Sidewalk Toronto, working in partnership with the tri-government agency Waterfront Toronto, the city, and the local community. We believe Sidewalk Toronto can achieve new levels of prosperity and affordability and make Toronto and Ontario a global hub for urban innovation — leading to significantly more jobs, businesses, and investments in the future of this great region.

Sidewalk Labs has already committed US$50 million to develop the plans for Sidewalk Toronto and engage stakeholders in Toronto and Ontario. We have hired 16 employees in Canada already this year and employ 45 Canadian firms to support our work. Earlier this month, we opened a new waterfront office and a place for the public to participate in our innovation and development process.

And this is just the beginning.

Over the next four years, Sidewalk Labs and our parent company, Alphabet, want to work with you to deliver a plan that will lead to thousands of new jobs and billions of dollars of new investment in essential infrastructure.

While our primary focus is on Toronto's waterfront, we believe many of the solutions and innovations developed there can be adopted by other areas or neighbourhoods throughout the country, leading to benefits for more Canadians. We will partner with Canadian universities and companies to help local startups scale and help local workers find jobs in growth sectors such as technology. Most of all, we will

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create the open conditions for Canadians to launch new companies of their own — turning the waterfront in Toronto into a hub for entrepreneurs trying to build the next great global business.

As soon as you are available, I would like to arrange for a meeting to discuss how we can partner to reimagine Toronto's eastern waterfront and create jobs and economic growth for Canada. Please have your team contact me at [redacted] and I would be happy to discuss the Sidewalk Toronto project with you further.

Congratulations again on your appointment to this important and exciting new role.

Sincerely,

[redacted]

Daniel L. Doctoroff
CEO

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ATIA - 13(1)(c) ATIA - 21(1)(a)
ATIA - 13(1)(d) ATIA - 21(1)(b)

Cariaga, Flordeliza (INFC)

From: Tippins, Shawn (INFC)
Sent: February 25, 2019 10:05 AM
To: Faraday-Smith, Nancy (INFC)
Subject: FW: debrief - need one for Kelly
Attachments: FEB14-SWTO-Business-Case-Overview.pdf; WT Exec brieifing MIDP Vol III.pdf

Nancy - as mentioned. Attached is a modified report, that adds some key issues from the WT and SWL presentations, respectively. Decks are also attached as per Glenn's recommendations.

From: Faraday-Smith, Nancy (INFC)
Sent: Saturday, February 23, 2019 10:46 AM
To: Campbell, Glenn (INFC)
Cc: Tippins, Shawn (INFC)
Subject: RE: debrief - need one for Kelly

Glenn -

Further to your email, below is a draft summary of Friday's MIDP deep-dive meeting between tri-government partners and Waterfront (Meg Davis/Kristina Verner) and, later, including Sidewalk (Josh Sirefman, SWL Head of Development).

[redacted]

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[redacted]

SIDEWALK PRESENTATION

- Sidewalk (Josh Sirefman) provided a project overview update (largely the deck that was leaked to public last week), moving quickly to business case elements given focus of governments' interest. Key transaction elements of the Business Case outlined in the SWL presentation (attached) include:
  - Design a “win-win” structure in which the economic incentives for government and Sidewalk are aligned and transparent
  - Ensure that experimentation and prototyping remain core to the project, while protecting government and the public from
  - unreasonable downside risk
  - Limit Sidewalk’s role to the minimum amount necessary needed for the project to achieve its objectives to the fullest, and
  - ensure third-party participation— particularly in real estate development
  - Create a structure that enables Sidewalk to shoulder the burden of upfront risk, and be compensated in later stages
  - Whenever possible, create discrete deal components in order to simplify and de-risk the transaction
  - Whenever possible, utilize financing and implementation mechanisms based on precedents that have been validated previously,
  - particularly in Toronto
  - Incorporate stage gates and specific metrics for accountability

[redacted]

From: Campbell, Glenn (INFC)
Sent: February 22, 2019 9:35 PM

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To: Faraday-Smith, Nancy (INFC) <nancy.faraday-smith@canada.ca>; Tippins, Shawn (INFC) <shawn.tippins@canada.ca>
Subject: debrief - need one for Kelly

Preferably by Sunday as these issues are active

[redacted] Met with [redacted] on chair and SWL issues.

[redacted]

Glenn Campbell
Assistant Deputy Minister
Investment, Partnerships and Innovation
Infrastructure Canada
427 Laurier, 10th floor, Ottawa
613 941-0722
Glenn.campbell@canada.ca

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Key Objectives

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Waterfront Toronto, the three levels of government, and Sidewalk Labs have certain objectives that must be aligned in order to unlock the Eastern Waterfront and enable the city to realize the area's untapped potential.



What We've Heard: Policy Objectives

- **Strong economic growth and thousands of new jobs** while protecting existing industries in the Eastern Waterfront, including film
- **Substantial increase** in affordable housing
- **A series of other public policy outcomes** to address certain urban challenges, including sustainability and congestion

What We've Heard: Deal Objectives

- **Build off success**—prove the model
- **Adequate government control** to ensure the best outcomes for citizens
- **Ensure the local development community** plays a prominent role in developing the Eastern Waterfront
- **Appropriate standard** for data and privacy

Sidewalk Labs Objectives

- **Sufficient scale** to achieve its objectives and prove the ability of its approach to positively impact urban quality of life
- **Adequate return** on its investment

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What Sidewalk Can Uniquely Bring

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Sidewalk was formed to function at the intersection of urban planning, technology, and policy. The team we have brought together and the operating model we have developed reflect a unique set of capabilities.

Approach to Innovation, incorporating both physical planning and a technology roadmap, that includes a series of key innovations and technologies while creating the conditions for others to build on

Investment in Economic Development including the catalytic impact of Google jobs, and support for an urban innovation cluster

Patient Capital that has a different return profile and objectives than both traditional real estate and traditional venture investing, enabling more robust R&D than typical urban development

Innovative Infrastructure Financing that fills a gap in the capital markets, and creates a path for infrastructure delivery that both proceeds at a rapid pace and achieves ambitious sustainability and quality of life goals



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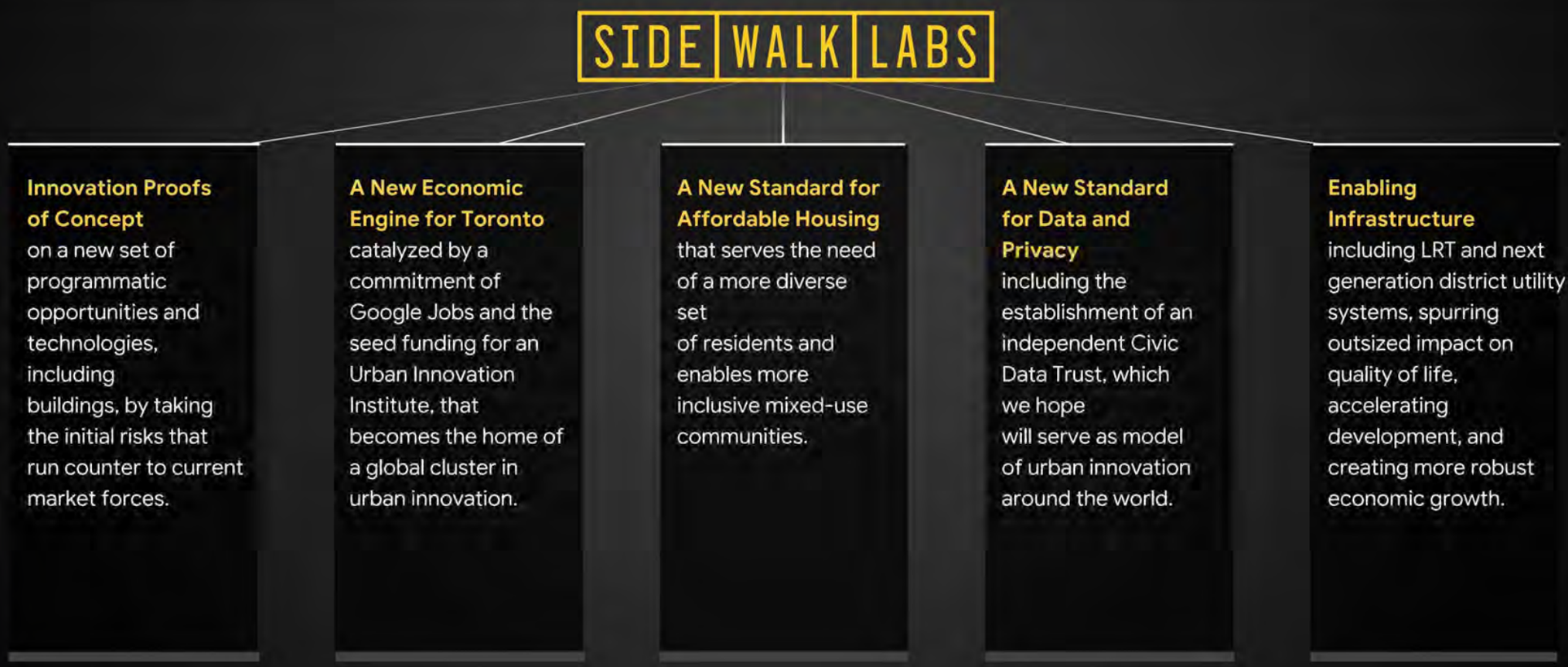
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Sidewalk as Catalyst

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Sidewalk Labs aims to fill gaps that the public and private sectors are currently unable to fulfill themselves, to help deliver a series of outcomes that meet the shared objectives of all stakeholders. This reflects the feedback we have received from stakeholders in Toronto—to act as catalyst and do the minimum amount necessary for the project to flourish while creating the conditions for others to build on.



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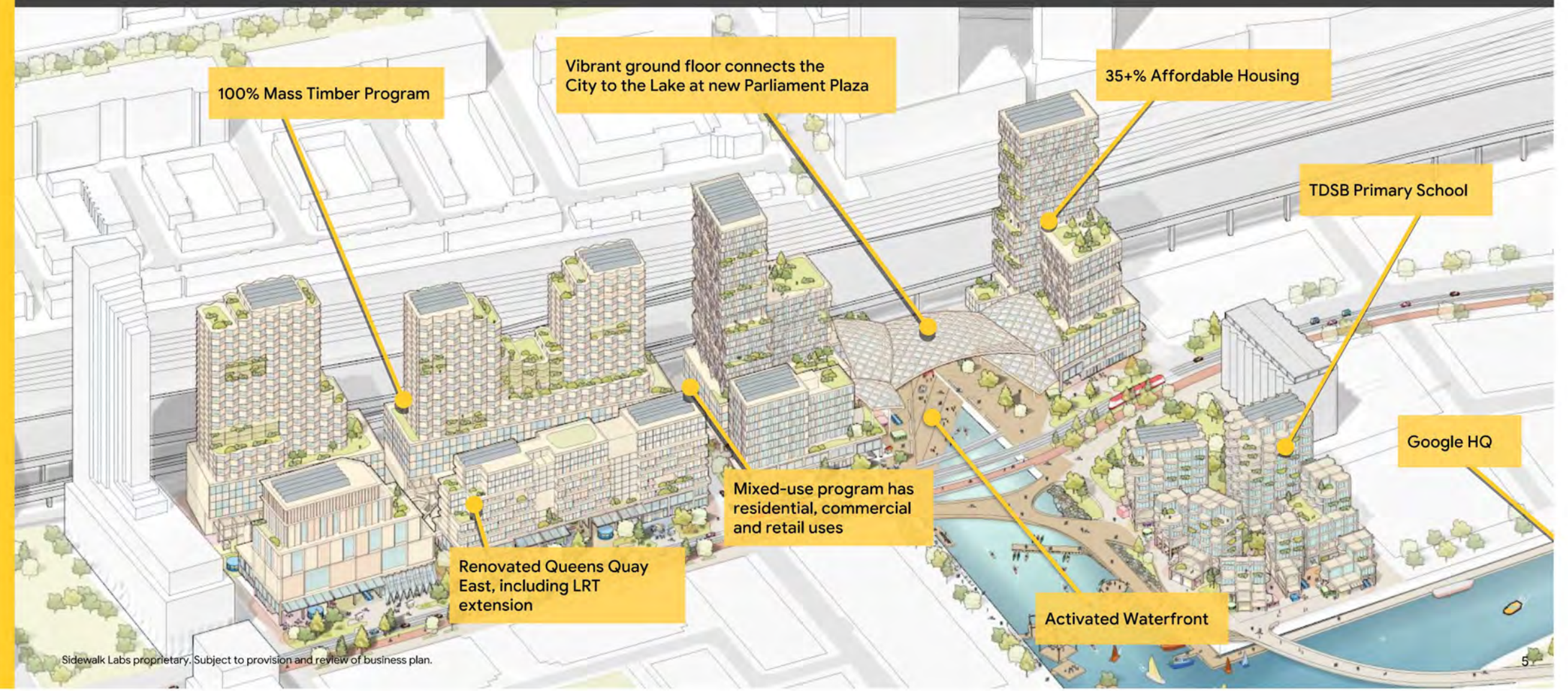
FEBRUARY 2019 PROJECT UPDATE

New Approaches to Urban Development

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Quayside will be the beginning of a new approach to urban development on Toronto's Eastern Waterfront that sets a new standard for urban development in the 21st century.



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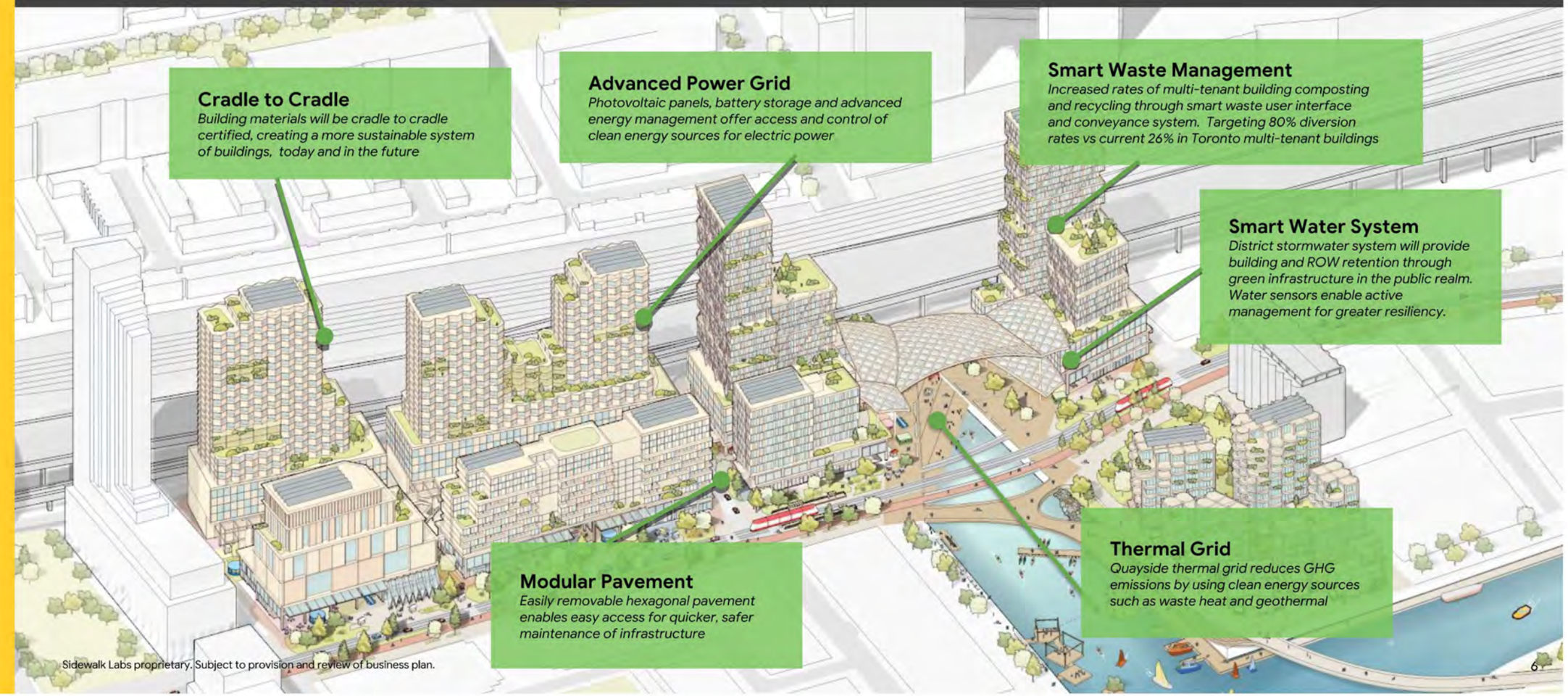
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Starting the Path to Climate Positive

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At Quayside, Sidewalk Labs will invest in a series of innovations that drastically reduce the level greenhouse gas (GHG) emissions, enable smarter management of resources, and reduce the cost of future upgrade and maintenance to the system.



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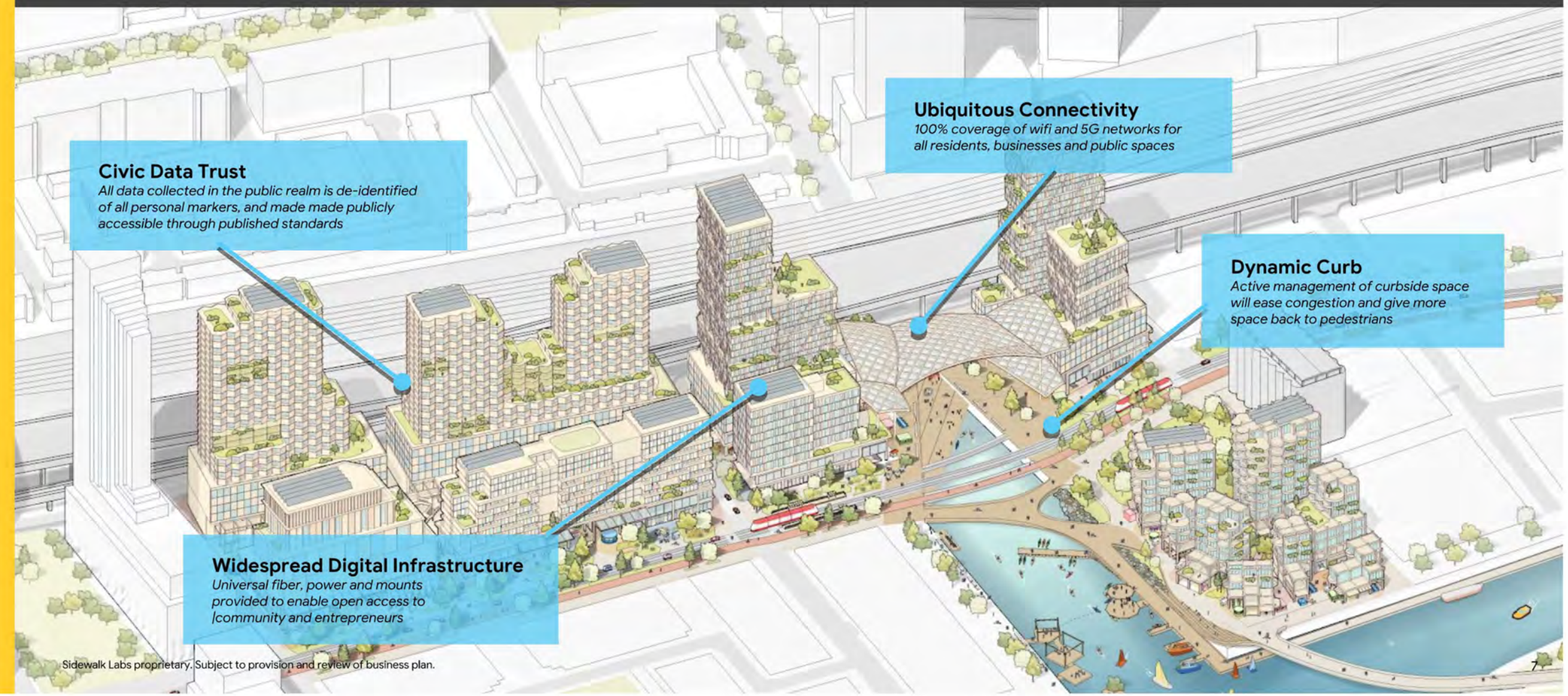
FEBRUARY 2019 PROJECT UPDATE

Piloting Digital Innovations

Quayside will be a fully connected neighbourhood and a testbed for digital innovations within Sidewalk Toronto's responsible data use framework.

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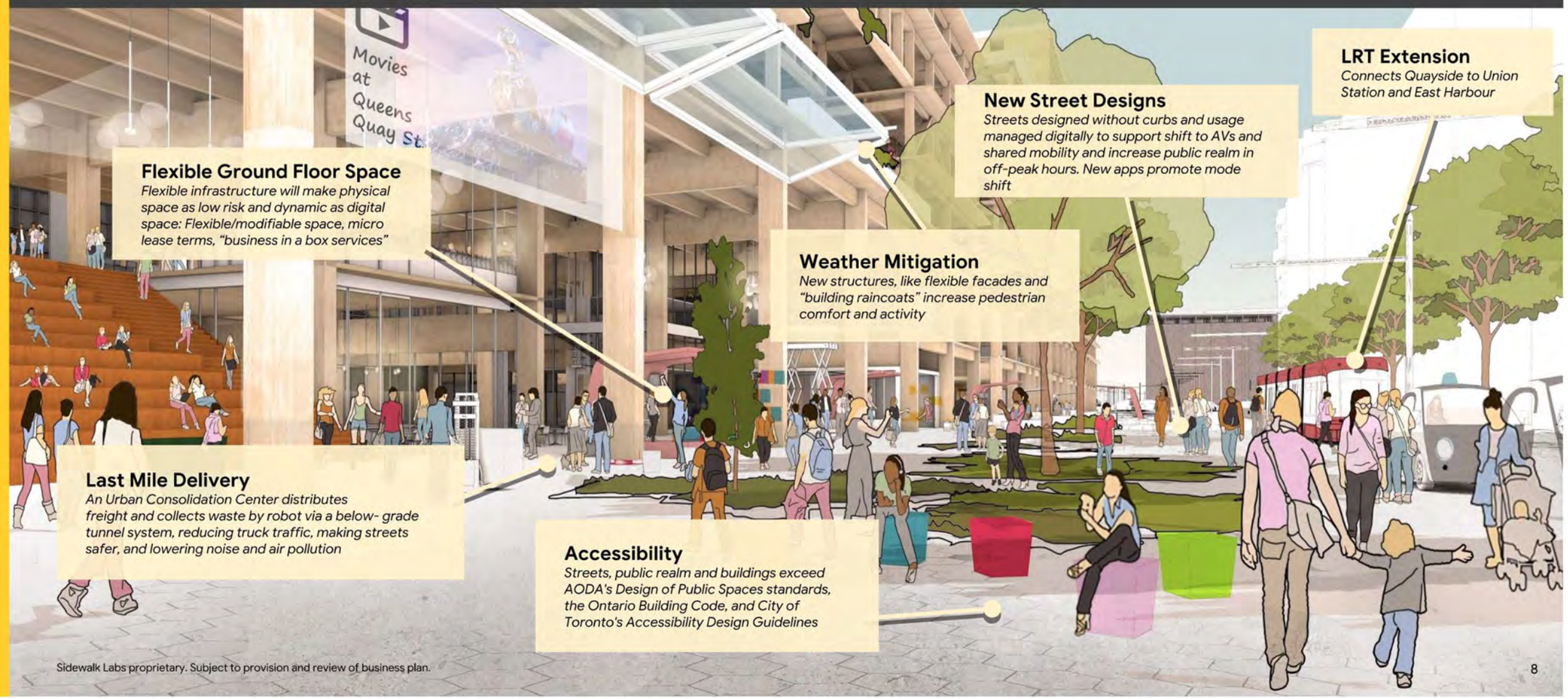
FEBRUARY 2019 PROJECT UPDATE

Testing New Mobility & Enhanced Public Space

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SIDEWALK LABS

Innovations in mobility management and building systems, combined with great urban design will create porous ground floor space that breaks down barriers between different uses and prioritizes the pedestrian experience.



Flexible Ground Floor Space
Flexible infrastructure will make physical space as low risk and dynamic as digital space: Flexible/modifiable space, micro lease terms, "business in a box services"

New Street Designs
Streets designed without curbs and usage managed digitally to support shift to AVs and shared mobility and increase public realm in off-peak hours. New apps promote mode shift

LRT Extension
Connects Quayside to Union Station and East Harbour

Weather Mitigation
New structures, like flexible facades and "building raincoats" increase pedestrian comfort and activity

Last Mile Delivery
An Urban Consolidation Center distributes freight and collects waste by robot via a below- grade tunnel system, reducing truck traffic, making streets safer, and lowering noise and air pollution

Accessibility
Streets, public realm and buildings exceed AODA's Design of Public Spaces standards, the Ontario Building Code, and City of Toronto's Accessibility Design Guidelines

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FEBRUARY 2019 PROJECT UPDATE

A New Economic Engine for Toronto

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SIDEWALK LABS

We believe the project can make Toronto the global hub in the field of urban innovation, catalyzing thousands of new jobs and generating billions in investment.

Economic growth within the project geography, and Toronto more broadly, would be driven by a series of key components:

- **Significant increase in Google jobs over 10 years in the Eastern Waterfront as an initial catalyst**
- **An Urban Innovation Institute,** leveraging the unique physical and digital infrastructure in Sidewalk Toronto to do cutting edge research, incubate new startups, and cultivate the next generation of urban innovators, would be a second catalyst. Sidewalk is prepared to make an initial seed investment to create the Institute.
- Together these two catalysts will spark a **cluster in urban innovation,** drawing entrepreneurs and companies from around the world to the laboratory on Toronto's Eastern Waterfront
  - ***EXAMPLE:* Sidewalk's commitment to Mass Timber** would accelerate step-change growth in the forestry, design and timber manufacturing industries
  - ***EXAMPLE:* Sidewalk's unique approach to ground floor space,** a flexible building system we call "Stoa", would enable a unique range of ground floor uses that encourage small business and entrepreneurship growth within mixed-use neighbourhoods

—

- **Sidewalk has commissioned an independent third party, UrbanMetrics, to complete an Economic Impact Report on the Sidewalk Toronto Project,** which will include estimates for job creation, both construction and ongoing investment, GDP growth, and incremental city revenues. We look forward to sharing that report upon its completion.



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FEBRUARY 2019 PROJECT UPDATE

Google Canadian HQ

An new economic cluster on the Eastern Waterfront would be anchored by a significant commitment of Google jobs located at a campus on Villiers Island.

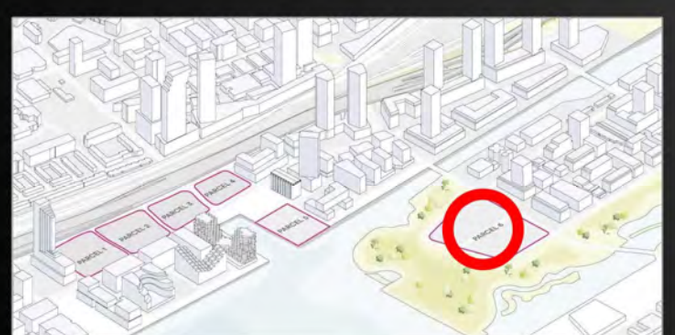
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We have explored a series of design options for a Google Campus, including an approximately 1.5M–2M SF location on the western side of Villiers Island, located on a planned LRT stop.

This campus would have seats for a significant increase of Google jobs.

Within a brand new campus we imagine including a 600K–1M SF headquarters, integrated with a mix of other uses and amenities (commercial partners, retail, education, non-profit).





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A New Standard for Affordable Housing

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SIDEWALK LABS

Our targets for affordable housing on Quayside and Villiers West would increase the provision of affordable housing by almost 4x compared to usual waterfront development in Toronto, and serve a much broader portion of the population.

More Affordable

40% Below Market Housing

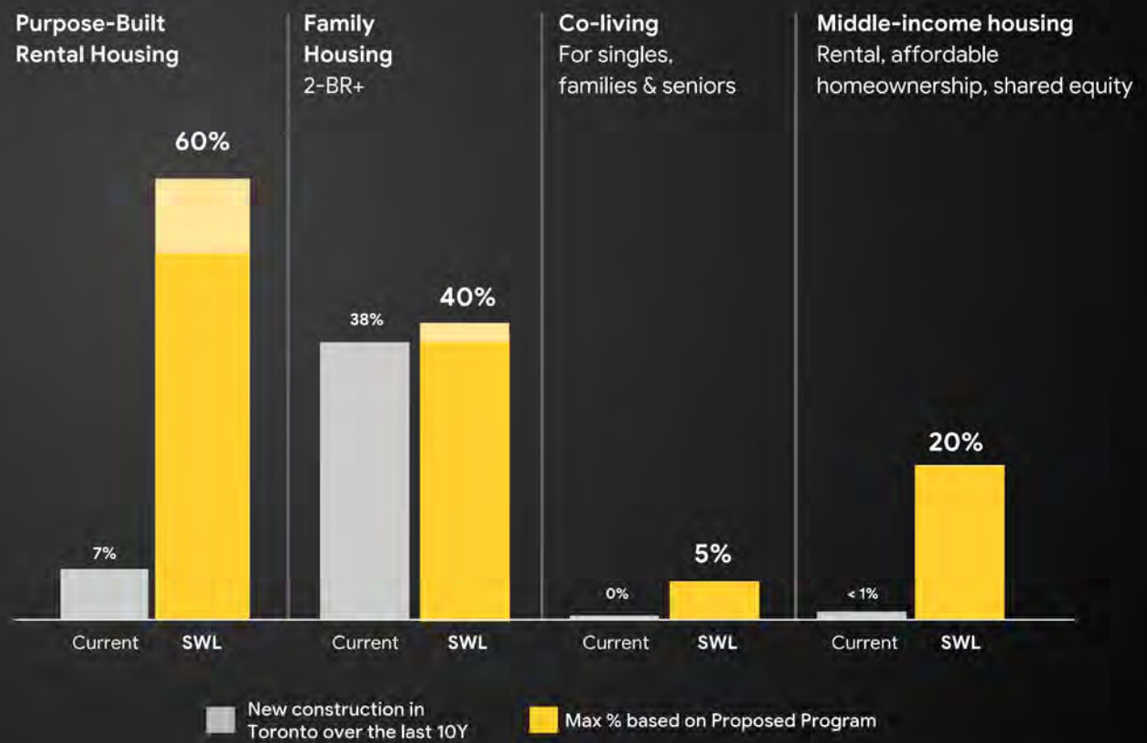
20%
affordable
Including 5% deep affordability

Up to
20%
middle income
Including up to 15% affordable rental and 5% shared equity

COMPARE TO
8% of total Toronto housing stock as affordable and social housing

COMPARE TO
<1% of total Toronto housing stock as affordable homeownership today

More Options



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A New Standard for Data and Privacy

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SIDEWALK LABS

Data can play a role in improving the day-to-day operation of the neighbourhood, leading to a more sustainable, accessible and responsible place to live. Sidewalk Labs will receive no special treatment and will not sell personal information or use it for advertising purposes.

Civic Data Trust

An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Labs.

RDUA

Responsible Data Use Assessment

Publicly auditable assessment for all public and private digital services required before data is collected and used.

A New Global Standard for the Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

Open Standards

Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation.

RDU Guidelines

Responsible Data Use Guidelines

Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation.

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Quayside in Context

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The economic and conceptual viability of many elements of the Quayside site plan may only be possible at a larger scale.

Thinking at Scale

- From the RFP through the PDA, Waterfront Toronto has always sought solutions to address how we can maximize the impact of the shared objectives of the City, Province, Waterfront Toronto, and Sidewalk Labs, and we have responded as such.
- We believe that while Quayside will be an impactful starting point, scale actually plays a significant role because:
  - The impact of each individual innovation increases (for example, additional affordable housing, greater synergies in cutting carbon emissions, greater ability to reduce car trips, greater catalyzation of the tall timber industry)
  - Greater scale than 12 acres is likely needed given the initial investment in prototypes at Quayside
  - Holistic thinking is what can accelerate the provision of infrastructure on the Eastern Waterfront, and more quickly unlock the value of the Port Lands envisioned in the Port Lands Planning Framework
- Scale means different things for different outcomes and investments.

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Impacts that Can Only Be Achieved with Scale

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The impact of Individual systems increases exponentially as the scale of the project increases.

Buildings	Mobility	Active Ground Floor	Sustainability	Freight
				
Meaningful reductions in costs (critical to achieving aggressive housing affordability savings) using factory-built timber buildings only works at scale.	AVs only work at scale, enabling the achievement of mobility-as-a-service and lower family transportation costs	Retail model enabling a much more dynamic retail environment and opportunity for small business built on Stoa and new building typologies only works at scale.	Achieving climate positive and building savings in energy costs with the thermal grid only are achieved at scale.	Business model for an Urban Consolidation Center and freight tunnels works at scale

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Transaction Principles

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SIDEWALK LABS

In designing a conceptual framework for an overarching transaction, Sidewalk Labs has followed a set of principles designed to meet all parties' objectives.

Transaction Principles

- Design a "win-win" structure in which the economic incentives for government and Sidewalk are aligned and transparent
- Ensure that experimentation and prototyping remain core to the project, while protecting government and the public from unreasonable downside risk
- Limit Sidewalk's role to the minimum amount necessary needed for the project to achieve its objectives to the fullest, and ensure third-party participation— particularly in real estate development
- Create a structure that enables Sidewalk to shoulder the burden of upfront risk, and be compensated in later stages
- Whenever possible, create discrete deal components in order to simplify and de-risk the transaction
- Whenever possible, utilize financing and implementation mechanisms based on precedents that have been validated previously, particularly in Toronto
- Incorporate stage gates and specific metrics for accountability

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An IDEA District on the Eastern Waterfront

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The City of Toronto would create an "Innovative Development and Economic Activation District" —an IDEA District— corresponding to the project geography, to create the governance necessary to implement the Project. Waterfront Toronto would be the administrator of this district.

The IDEA District would leverage the combination of three elements to deliver on the project's public policy objectives:

1. A newly empowered Waterfront Toronto in an oversight and administrative role
   - Defined mission to promote innovation and development within the geography, and the mandate to oversee and steer key real estate, infrastructure, and technology decisions.
   - To be effective, this administrator must be accountable to the public; receive well-defined powers over development activity and the deployment of infrastructure within the jurisdiction; and engage seamlessly with other government agencies.

2. A custom set of regulatory, and policy tools—"An Innovation Framework"
   - A set of regulatory and policy tools (across categories like mobility, sustainability, housing, buildings) designed to foster the necessary conditions for delivering on the promise of the MIDP and using its success as a catalyst for spurring economic growth throughout the waterfront
   - 3 categories of reforms: (1) targeted relief from requirements (e.g., reduce parking requirements); (2) enhanced requirements for new developments (e.g., on-going performance targets related to carbon emissions); (3) legal authorization for management entities (e.g., a non-profit public realm management entity)

3. A special set of financing tools that enable the project to leverage its own value for implementation.
   - Financing tools could address project value created through development charges, incremental property tax, and increased land value

All three levels of government would determine the contours of the IDEA District in the course of its establishment.

As Innovation and Funding Partner to Waterfront Toronto, Sidewalk Labs would assist in achieving ambitious policy goals and accelerate development throughout the IDEA District.

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Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (Summary)

As Innovation and Funding Partner, Sidewalk Labs' role—and corresponding business models—is best summarized in discrete components:

1. Planning Partner
2. Real Estate Research and Development
3. Real Estate Economic Development Catalyst
4. Infrastructure Financing
5. Horizontal Development Partner
6. Advanced Infrastructure Facilitator
7. Technology Deployment
8. Investments in Economic Development
9. Value Sharing

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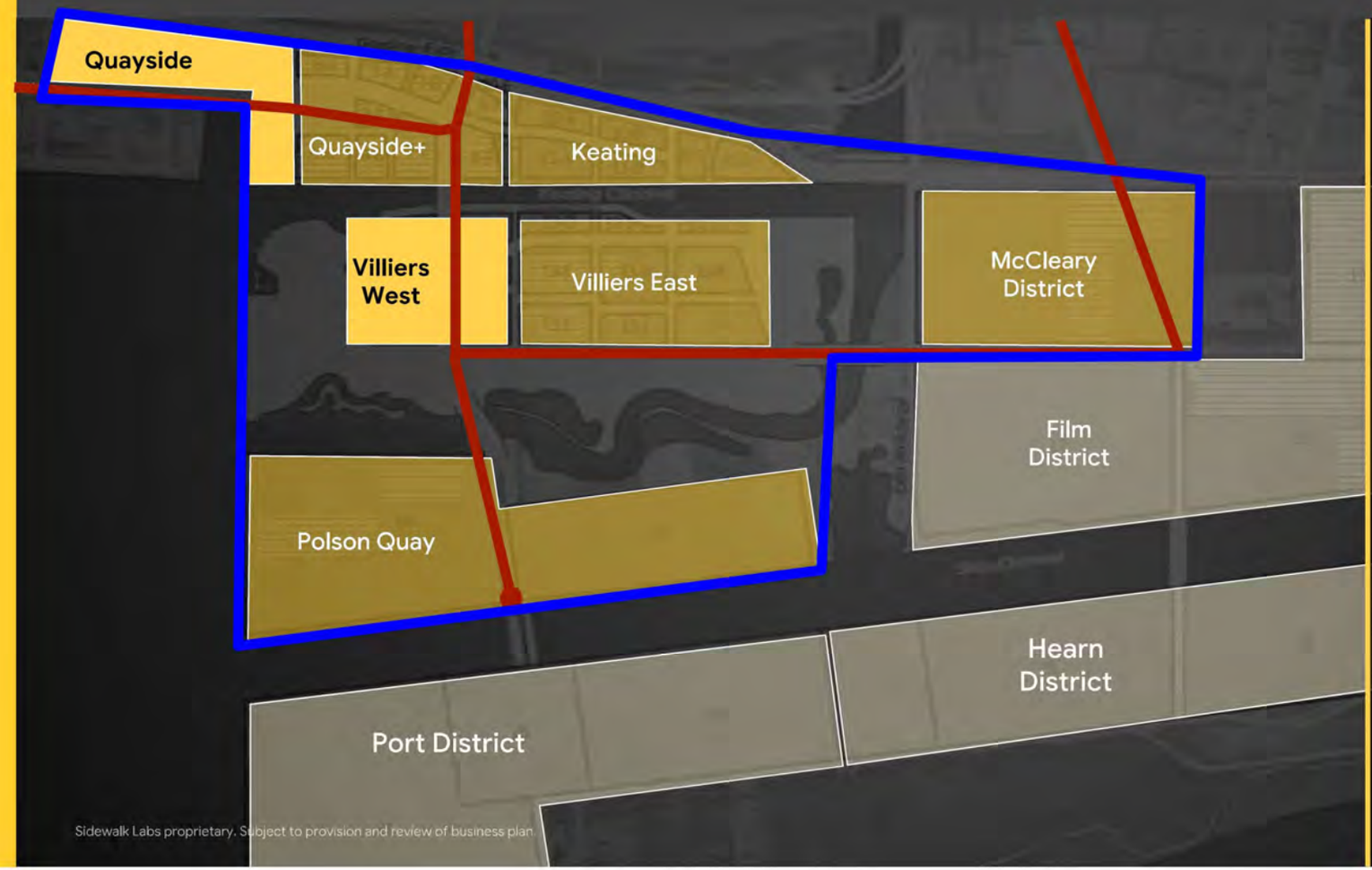
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FEBRUARY 2019 PROJECT UPDATE

Project Concept

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SIDEWALK LABS



PROJECT SCOPE

Phase 1 (Quayside)

- 12 acres
- 3M SF
- ~5,000 residents (3,000 units of housing)
- ~3,900 jobs "on site"

Phase 1+2 (Complete Project)

- 190 acres
- 35M SF
- ~50,000 residents (33,000 units of housing)
- ~45,000 jobs "on-site"

IDEA District

SWL executes horizontal and real estate development

SWL facilitates horizontal infrastructure only

SWL facilitates the Phase 1 LRT extension

***Note**: In total, Sidewalk Labs proposed to complete ~5M SF of real estate development, only ~15% of the total project*

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (1 of 4)

Role		Description	Business Model
1	**Planning Partner**	In this role, Sidewalk Labs would support Waterfront Toronto in its role as IDEA District Administrator during the planning phases for each neighbourhood. This would include collaboration on: • The overarching Innovation Framework and updates, Precinct Plans, Master Infrastructure Plans, guidelines for individual parcels and development agreements with third-party real estate developers	• Contractual relationship with Waterfront Toronto • Sidewalk Labs to receive payment for its advisory role
2	**Real Estate Research and Development**	In this role, Sidewalk Labs would develop, in partnership with local development entities, approximately 3.0M SF at **Quayside**. The explicit mission of this development would be to prototype innovations or programmatic decisions that would achieve WT's objectives, but, because they go against market pressures, would likely lead to a below market return. The current development plan includes approximately 3,000 units of housing (40% below market), room for 3,900 jobs, buildings entirely of tall timber, an expanded park network including the proposed Silo Park, a renovated Parliament Slip, and next generation infrastructure systems including: digital electricity, a thermal grid, and consolidated waste removal.	• Traditional real estate development economics • Land price to be negotiated with Waterfront Toronto • Profit-sharing with Waterfront Toronto if returns exceed certain threshold
3	**Real Estate Economic Development Catalyst**	In this role, Sidewalk Labs would develop, in partnership with local development entities, approximately 2.7M SF at **Villiers West,** relocating Google's Canadian HQ to the site. The explicit mission of this development would be to create outsized economic growth through the relocation of the Google HQ into a mixed-use, open campus with multiple corporate tenants.	• Traditional real estate development economics • Land price to be negotiated with WT / City • Profit-sharing with WT / City if returns exceed certain threshold

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (2 of 4)

Role		Description	Business Model
4	**Infrastructure Financing**	In this role, Sidewalk Labs would fill a critical financing gap needed to deliver the full suite of infrastructure systems necessary to develop Quayside and the Eastern Waterfront on an accelerated schedule and achieve Waterfront Toronto's sustainability objectives. Even beyond the in-progress $1.2B Don Mouth Naturalization Project flood protection, billions of additional investment in enabling infrastructure—LRT, plus systems like electricity, heating, water and sewage, road networks, and fiber, new parks and public space, and extensive environmental remediation—would be necessary for complete communities to grow on the waterfront. Were the status quo to proceed, this infrastructure would likely be implemented piecemeal and incrementally, as funding became available through either government allocations or as City Development Charges were realized in initial phases of Eastern Waterfront development. Sidewalk estimates that if Toronto were to create a "value-capture zone" in which Development Charges and incremental property taxes were reserved for this specific geography, it could generate **~$6B in value** from the Project to pay for necessary infrastructure over the next ~30 years. However, these traditional sources will not be available at the time needed to construct this infrastructure at the pace and scale required to deliver the outcomes WT desires, nor to achieve some of the more ambitious policy objectives. As such, Sidewalk Labs **will bridge this gap in two ways**: 1) Providing financing in advance of public funds being available for infrastructure projects like the LRT, parks, and utility systems. 2) Providing OPTIONAL "stapled financing" for Advanced Infrastructure systems that require innovative funding and operational models to achieve policy objectives	1) Sidewalk would be paid back on all equity commitments used to bridge the gap between the time funds were needed to begin construction and funds were available from the project A financing fee would be applied to these funds The funds used to pay back Sidewalk in this capacity would be either the Development Charges or Incremental Property Taxes allocated to fund the associated infrastructure project 2) Advanced Infrastructure Systems would be operated through third-party entities, often in partnership with current operators (like Toronto Hydro). Third-parties operators would be chosen by an open RFP process, and all respondents would have the OPTION of choosing to use Sidewalk Labs-provided funding as part of their approach. Sidewalk would receive contractual-based market economics if respondents elected to use this "stapled financing."

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (3 of 4)

Role		Description	Business Model
5	**Horizontal Development Partner**	In this role, Sidewalk Labs would support Waterfront Toronto in its role as IDEA DIstrict Administrator during the infrastructure implementation phases for each neighbourhood. This would include collaboration on: • Delivery of systems such as parks, utility systems, site preparation work Division of responsibilities between the two organizations generally fall to each organization's strengths. Waterfront Toronto would provide operational excellence in line with what it delivered in past projects—flood mitigation, West Don Lands, Bayside. Sidewalk Labs would provide design support, as well as manage the coordination of funding, and innovative project elements. **Note:** This role can be shaped to meet the needs of all parties. From Sidewalk's perspective, a critical issue is the ability to have influence over the timing and management of the delivery of projects for which Sidewalk Labs' "bridge" financing is directly funding	• Waterfront Toronto and Sidewalk Labs would split a traditional "Developer Fee" applied to the total infrastructure cost, split in proportion to the allocation of responsibilities and associated resource requirements
6	**Advanced Infrastructure Facilitator**	In this role, Sidewalk Labs would conduct initial design work, craft the RFP process, and coordinate the implementation among each Advanced Infrastructure system to ensure adherence to the project's innovation objectives.	• Sidewalk Labs to be reimbursed for costs related to initial design work and managing the RFP process. • These costs will be allocated on a system by system basis and reimbursed by the operators selected for each system

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Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (4 of 4)

Role		Description	Business Model
7	**Technology Deployment**	In order to deliver on the project objectives, Sidewalk Labs would deploy a limited set of critical technologies. These technologies would be categorized as Purposeful Solutions, for which Sidewalk Labs and Waterfront Toronto would enter into agreements under predetermined and unique procurement and contractual rights.	• Rights to prototype, test, and deploy negotiated on an individual basis with WT or relevant agency • Value from IP created in "testbed" conditions shared with public entities
8	**Investments in Economic Development**	In order to capitalize on, and catalyze, the enormous economic potential inherent in the vision of the Project, Sidewalk Labs will invest in a series of economic development initiatives that will benefit both the project area and Toronto writ-large. Category 1 Investments: Google HQ; Urban Innovation Institute; Workforce Development Initiatives Category 2 Investments: Tall Timber Factory, Toronto-based Venture Fund	Category 1 *No specific, direct return to Sidewalk Labs* Category 2 *These investments have their own economics.*
9	**Value Sharing**	Because of the holistic value Sidewalk Labs is bringing to the project across the first 7 buckets on this chart, Sidewalk Labs would share in the incremental value created within the overall project geography through the disposition of publicly-held lands to third parties in the project geography. In particular, buckets 1,2,4,6, 7, and 8 reflect economic constructs for which Sidewalk Labs is deploying capital / resources at below market rates of return, and deferring any possible return on investment to the potential long-term value created through its partnership with WT.	When public land within the IDEA District is sold to third-party developers through a WT-managed public RFP process, the incremental value would be split in a TBD negotiated proportion between Government parties and Sidewalk Labs

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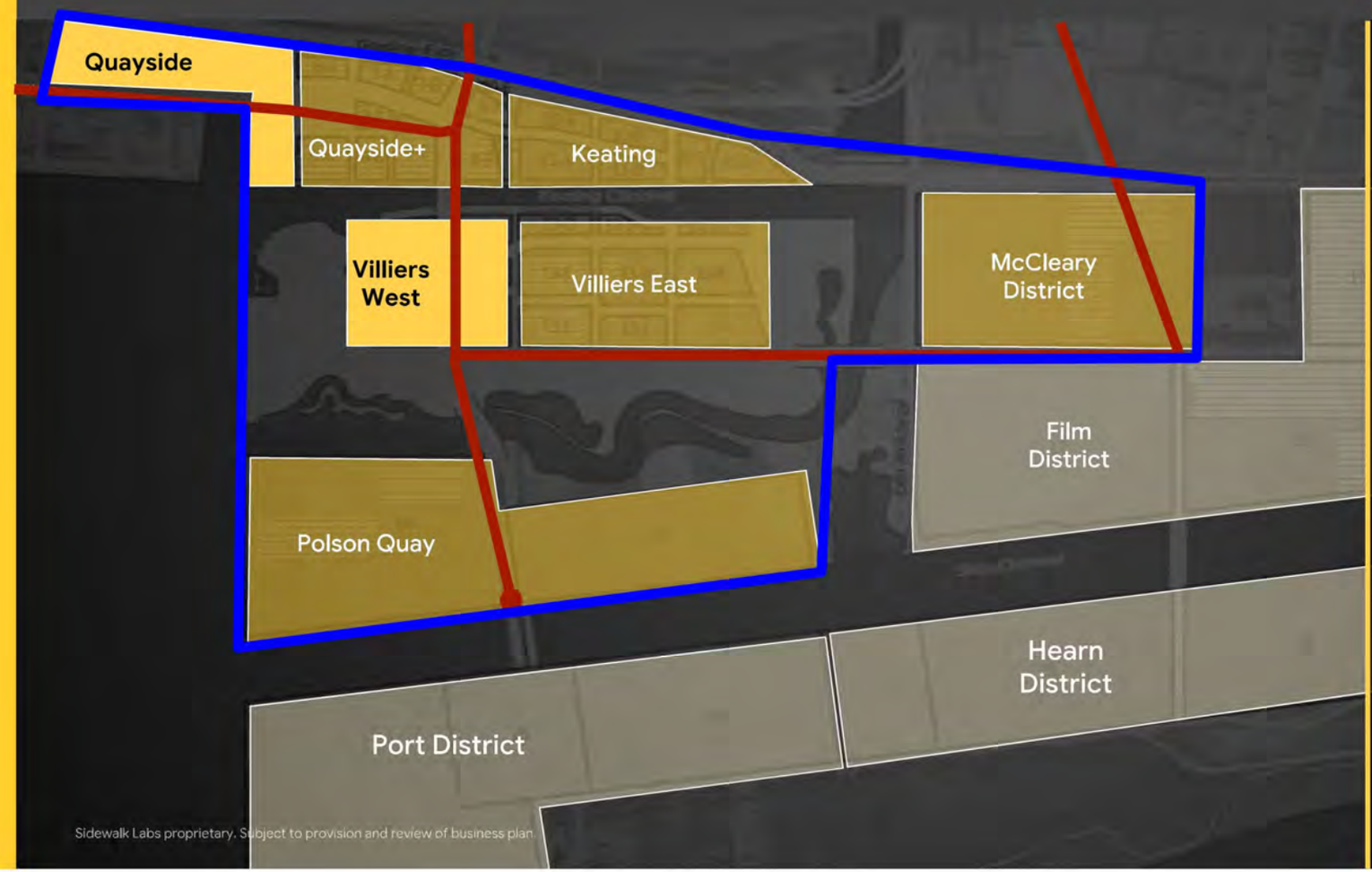
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FEBRUARY 2019 PROJECT UPDATE

Project Concept

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SIDEWALK LABS



PROJECT SCOPE:

Phase 1 (Quayside):

- 12 acres
- 3M SF
- ~5,000 residents (3,000 units of housing)
- ~3,900 jobs "on site"

Phase 1+2 (Complete Project):

- 190 acres
- 35M SF
- ~50,000 residents (33,000 units of housing)
- ~45,000 jobs "on-site"

IDEA District

SWL executes horizontal and real estate development

SWL facilitates horizontal infrastructure only

SWL facilitates the Phase 1 LRT extension

***Note**: In total, Sidewalk Labs proposed to complete ~5M SF of real estate development, less than 15% of the total project*

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FEBRUARY 2019 | PROJECT UPDATE

Potential Phase 3 Expansion (Dual Option)

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In a potential Phase 3, the IDEA District would extend to south of the Ship Channel and there would be a mutual option for Toronto and Sidewalk Labs to deliver additional enabling infrastructure, including an extended LRT. The East Port and Film District have been excluded to protect existing uses.



PROJECT SCOPE:

Phase 3 (Port Lands South):

- 160 acres
- 15M SF
- ~25,000 residents (17,000 units of housing)
- ~25,000 jobs "on site"

Phase 1+2+3 (Extended Project):

- 350 acres
- 50M SF
- ~75,000 residents (50,000 units of housing)
- ~70,000 jobs "on-site"

Extended IDEA District

SWL executes horizontal and real estate development

SWL facilitates horizontal infrastructure only

SWL facilitates the Phase 1 LRT extension

SWL facilitates the Phase 2 LRT extension

Note: *Sidewalk Labs proposes no additional SWL real estate development in Phase 3*

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Ensuring Accountability: Milestones & Phasing

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As the project proceeds, we believe permission for the the IDEA District to expand should be rooted in the ability of the initial neighbourhoods to achieve stated objectives.

A potential construct to expand the zone for which the innovation guidelines apply within Phases 1+2 would be based on specific targets:

- Stage gates, included as part of an initial set of agreements, would set the parameters that would need to be achieved in order to expand the project geography. These could potentially include:
  - Number of units of below market housing
  - Delivery of key infrastructure components by a given date



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Pages 63 to 72
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c), 20(1)(d)
of the *Access to Information Act*

****

Les pages 63 à 72
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c), 20(1)(d)
de la loi sur l'accès à l'information

ATIA - 20(1)(b)
ATIA - 19(1)
ATIA - 20(1)(c)
ATIA - 20(1)(d)

McDade, Siobhan (INFC)

From: Campbell, Glenn (INFC)
Sent: June 11, 2018 7:16 PM
To: Tippins, Shawn (INFC)
Cc: Ladouceur3, Natalie (INFC); Wellman, Angela (INFC); Mitchell2, Lisa (INFC)
Subject: Fw: Quayside Executive Steering Committee March 26, 2018
Attachments: QESC Agenda June 14, 2018.docx; Draft Quayside ESC Term of Reference June 14, 2018.docx; QESC Minutes April 20 2018.docx; Timeline PDA_MIDP_Board.xlsx - MIDP.PDF; PDA Negotiation and Reveiw Schedule.pdf

Glenn Campbell
[redacted]
613 941-0722 (w)

From: Edward Chalupka <[redacted]
Sent: Monday, June 11, 2018 7:10 PM
To: William Fleissig; Josh Sirefman; George Zegarac (george.zegarac@ontario.ca); Campbell, Glenn (INFC); Gillis, Kelly (INFC); Lou Di Gironimo ([redacted])
Cc: Meg Davis; Kristina Verner; Marisa Piattelli; Erik Cunnington; Michael Bernstein; David Stonehouse; Singbush, Bruce (MOI); Carol Mercer; Siri Agrell; Burton, Mike (INFC); Julius Gombos; John Brodhead; Micah Lasher; Simpson, Brook (INFC)
Subject: RE: Quayside Executive Steering Committee March 26, 2018

Hello all,

Please find attached materials for the upcoming Quayside Executive Steering Committee scheduled for this Thursday June 14th from 11 AM -12:30 PM at Waterfront Toronto's offices.

Please find attached the following materials:

1. Agenda
2. Minutes from the April 20th QESC Meeting
3. QESC Governance - Revised Terms of Reference
4. Plan Development Agreement – Timeline
5. Master Innovation and Development Plan - Timeline

Please note that for both the Digital Strategy Advisory Committee and Public engagement agenda items a verbal update will be provided to the Committee. Please also note that for item #9 - [redacted] - confidential materials will be distributed at the meeting.

Thanks

Ed

edward chalupka | director, government relations | **Waterfront Toronto** | 1310-20 bay street | toronto ON M5J 2N8 | [redacted]
www.waterfrontoronto.ca

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ATIA - 20(1)(b)
ATIA - 20(1)(c)
ATIA - 20(1)(d)

WATERFRONToronto

Quayside Executive Steering Committee (QESC)
20 Bay St. Suite 1310
June 14, 2018
11:00 AM – 12:30 PM

1. Introductions/Welcome

2. Approval of April 20th Minutes – ALL (5 Mins) – Decision Item

3. Governance – ALL (5 mins) - Decision Item
   a. Terms of Reference

4. Plan Development Agreement Update – WT (20 Mins) Information Item
   a. Process and timeline to receive comments on PDA

5. Master Innovation and Development Plan – Information Item (10 Mins)
   a. Timeline

6. Digital Strategy Advisory Committee Update – WT (10 Mins) – Information Item

7. Public Engagement Update - WT/SWL (10 Mins) – Information Item
   a. Roundtable Timelines
   b. Release of PDA and Framework Agreements

8. Other Business – ALL

[redacted]

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June 14, 2018

Terms of Reference
Draft

Quayside Executive Steering Committee (QESC)
Toronto Waterfront Revitalization Initiative

Background:

As approved in the 2017-18 Corporate Plan, Waterfront Toronto issued a competitive Request for Proposals for an Innovation and Funding Partner to help create and fund a plan for a globally-significant community on Quayside. This project is intended as a testbed -- engaging citizens, civic, academic and Canadian business organizations -- to showcase advanced technologies, building materials, sustainable practices, and innovative business/funding models than can achieve a healthy, diverse and climate positive urban development.

Sidewalk Labs was chosen as the successful proponent as Waterfront Toronto's Innovation and Funding Partner. Together, Waterfront Toronto and Sidewalk Labs will join with citizens and other partner entities to develop a Master Innovation and Development Plan (MIDP) to be delivered in the first quarter of 2019. The MIDP will be subject to review by Waterfront Toronto's Board and its shareholder governments, as well as Sidewalk Labs' Board and the relevant government regulatory authorities.

Proposed Coordination Entity:

The Quayside Executive Steering Committee is intended to provide tri-government project level communication and co-ordination with various government departments and ministries. The Committee will be convened and chaired by Waterfront Toronto and include representatives from, the City of Toronto, the Province of Ontario, the Government of Canada and Sidewalk Labs.

Role and Responsibilities:

The Quayside Executive Steering Committee will be the project-level coordination vehicle for reviewing and providing input on the following:

1. Plan Development Agreement (e.g. timeline);
2. Master Innovation and Development Plan;
3. Feasibility/Business Case.

The Quayside Executive Steering Committee will be the organizing and coordination entity to:

1. Review initial pilot projects before proposals are formally submitted to approving government regulatory authorities;

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2. Monitor and provide input to the public and stakeholder engagement plan;
3. Identify input on approval pathways for proposed project innovations;
4. Provide input on procurement protocols for WT assets;
5. Provide input and on procurement protocols for assets outside of WT's purview;
6. Review proposed milestones and schedule;
7. Review and provide input on project-related risk management protocols;
8. Refer policy and/or unresolved issues to the IGSC; and

Chair:

Waterfront Toronto will chair the Quayside Executive Steering Committee.

Membership:

The Quayside Executive Steering Committee will be comprised of the following:

- Waterfront Toronto: President and CEO (Chair);
- City of Toronto: Deputy City Manager Cluster B;
- Government of Ontario: Deputy and Assistant Deputy Ministers, Ministry of Infrastructure
- Government of Canada: Deputy Minister, Infrastructure Canada and Assistant Deputy Minister, Smart Cities Directorate, Infrastructure Canada
- Sidewalk Labs: Head of Development

Representatives of political offices (e.g. Office of the Mayor) will be invited to participate in meetings.

Quayside Executive Steering Committee meetings will be attended and supported by senior project manager staff/directors from each participating organization that is part of the Project Delivery Team.

Project Delivery Team and Administrative Support:

The Project Delivery Team will be comprised of Waterfront Toronto and Sidewalk Labs staff who will deliver the project and will include senior project manager staff/directors from other participating organizations and key consultants.

Waterfront Toronto will be responsible for drafting records of discussions, following up on decisions and actions, disseminating information, distributing meeting documentation, scheduling meetings and logistical arrangements, as required.

Dispute Resolution:

Any disputes involving Waterfront Toronto and Governments will be escalated to the IGSC.

Any disputes involving Waterfront Toronto and Sidewalk Labs will be managed through

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the Framework Agreement dispute resolution process or other legal documents which may supersede the Framework Agreement through the project lifespan.

Meetings:

Quayside Executive Steering Committee meetings will be convened every six (6) weeks. The schedule of meetings will be established by its members and meetings will be held in-person or by teleconference.

Agendas and agenda materials are to be prepared by the Project Delivery Team.

Reporting:

The Quayside Executive Steering Committee will report to the IGSC at its quarterly meetings. Materials will summarize key issues and flag any matters that may require the IGSC's attention.

Term:

The Quayside Executive Steering Committee shall exist and operate until the approval or disapproval of the Master Innovation and Development Plan. This Terms of Reference shall be revisited and updated by the Quayside Executive Steering Committee and IGSC members if the Quayside Project goes forward beyond the MIDP stage.

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Quayside Executive Steering Committee
Meeting Minutes

Friday April 20th, 2018
3:30 pm – 5:00 pm

Federal Representatives:	Kelly Gillis, Glenn Campbell, Brooke Simpson
Provincial Representatives:	George Zegarac, Bruce Singbush, Carol Mercer, Ron Ahluwalia
City of Toronto Representatives:	David Stonehouse, Jayne Naiman, Siri Agrell
Waterfront Toronto Representatives:	William Fleissig (Chair), Marisa Piattelli, Ed Chalupka, Erik Cunnington, Meg Davis, Carol Webb, Cameron MacKay
Sidewalk Labs Representatives:	Josh Sirefman, Micah Lasher, Lauren Skelly

	ITEMS DISCUSSED	
1.	Welcome and Introductions	Will Fleissig opened the meeting with introductions.
2.	Governance a) Memo – Quayside Project Governance	A protocol for briefing governments was approved by the Board at the March 29th Board Meeting. The protocol stipulates that the Quayside Committee share all significant documents and milestones with governments for input in advance of Board approval. The Committees that will be engaged in this process include: (i) Intergovernmental Steering Committee (ii) Quayside Executive Steering Committee
	b) Approval of Terms of Reference	Amend the ToR to emphasize and reflect tri-government coordination and communication of relevant policies that impact the project rather than government "oversight". Ministry of Infrastructure committed to facilitating meetings and policy issues with government representatives and have information flow both ways. It will be important to ensure that governments are brought along the process to ensure there are no surprises. Marisa Piattelli also

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	c) Committee Membership	reiterated that it is the expectation of WT's Board that there is a "no surprises" approach with our government partners. Kelly Gillis would like to have an observer role. Lou Di Gironimo will be representing the City. David Stonehouse will share a running list of meetings with government players.
3.	Quayside Planned Development Agreement Update	Meg Davis indicated that PDA discussions are going well. WT is targeting an end of June meeting of the Board of Directors followed immediately by an executed PDA. The current target for a negotiated MIDP agreement is the end of the calendar year (2018). Once approved, the PDA will become a public document with the intention of superseding the framework agreement. Sidewalk Labs indicated that it is important that the timelines for the PDA are met. Members of the QESC requested a gant chart that clearly outlines approval timelines and expected deliverables for both the PDA and MIDP.
4.	Update Presentation – Master Innovation and Development Plan (MIDP) Scope	The MIDP will set out a series of planning and financial targets and will also identify a pathway to obtain necessary policy and regulatory approvals. The federal government and the province committed to facilitating meetings with the pillar working groups (e.g. Mobility, Sustainability, Affordable Housing etc.) and relevant departments and Ministries. It would be informative to know what work (i.e. existing pilots and projects) that is currently being undertaken by governments that could inform the work of the partnership. The City also indicated that if SWL is planning on releasing any more apps publicly, the city and the Mayor's Office would like to be notified in advance.
5.	Public Engagement Update	Robust public engagement is a priority for the Quayside Project. The public will meaningfully participate and give feedback to the plan. The public's feedback will be reflected in the finished product. There is clearly a significant amount of public interest and there will be several avenues for public engagement to ensure ample opportunity for feedback.

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		The City indicated that as part of standard process it will conduct its own independent public consultations at the end of the Quayside planning process. City staff will report the results to council but indicated that it will not duplicate or compete with WT public engagement. The governments would like to be consistently informed of key themes and issues that emerge as part of the engagement process. The next meeting is currently being scheduled for May.
6.	Any other business:	Meeting concluded.

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QUAYSIDE PLAN DEVELOPMENT AGREEMENT (PDA)
NEGOTIATION & REVIEW SCHEDULE

JUNE

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
				1
				Circulate key terms, summary of PDA and PDA to IREQ Co-Chairs
4	5	6	7	8
Circulate key terms and Summary of PDA to IREQ			IREQ Meeting - legal team to walk IREQ through key terms, PDA and present summary	
11	12	13	14	15
Regular check-ins with IREQ and co-chairs				
IREQ Meeting - to review of draft PDA	Negotiation with SWL		QESC	
18	19	20	21	22
Regular check-ins with IREQ and co-chairs Negotiation with SWL	Circulate draft PDA to IREQ	IREQ Meeting		
25	26	27	28	29
Regular check-ins with IREQ and co-chairs		IREQ Meeting - to update on PDA before release to Board	Provide summary and draft PDA to Board	

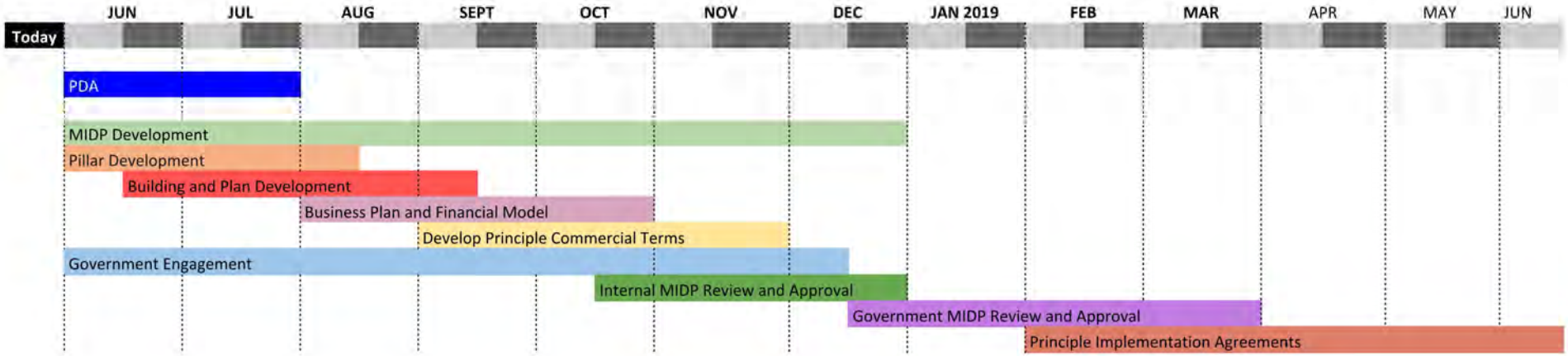
JULY

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
2	3	4	5	6
Brief Individual Board Members on PDA				
9	10	11	12	13
Quayside Specific Board Meeting to review draft PDA	Provide PDA to Governments	Government Briefings - Details and sequence of briefings to be finalized		
16	17	18	19	20
Government Briefings - Details and sequence of briefings to be finalized				
				QESC: Meet Governments for comments on PDA
23	24	25	26	27
IREQ Meeting - to review final draft PDA and Government comments	Circulate PDA and Government comments to Board			
30	31			
	Quayside specific Board Meeting for recommendation to approve PDA			

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DRAFT + CONFIDENTIAL

MASTER INNOVATION & DEVELOPMENT PLAN (MIDP) WORKING SCHEDULE



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Quayside Executive Steering Committee
Meeting Minutes

Thursday June 14th ,2018
11:00 am – 12:30 pm

Federal Representatives:	Glenn Campbell, Brooke Simpson, Shawn Tippen
Provincial Representatives:	George Zegarac, Bruce Singbush, Lynn Kekanovich
City of Toronto Representatives:	Giuliana Carbone, Lou Di Gironimo, David Stonehouse, Jayne Naiman, Siri Agrell
Waterfront Toronto Representatives:	Meg Davis (Chair), Julius Gombos, Kristina Verner, Ed Chalupka, Erik Cunnington, Michael Bernstein, Carol Webb,
Sidewalk Labs Representatives:	Josh Sirefman, Micah Lasher, John Brodhead, Lauren Skelly, Habon Ali,

	ITEMS DISCUSSED	
1.	Welcome and Introductions	Will Fleissig opened the meeting with introductions.
2.	Approval of April 20th QESC Minutes	Approved with no amendments.
3.	Governance a) QESC Terms of Reference	Given the overlap and duplication of membership in the Quayside Executive Steering Committee (QESC) with that of the already established Intergovernmental Steering Committee (IGSC) it was agreed by all order of government to integrate and fold the QESC into the IGSC. Glenn Campbell indicated that the federal government wanted to ensure that its role remained strategic and not devolve into operational oversight.

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		It was agreed that more frequent meetings of the IGSC would be scheduled (every 6-8 weeks approximately) which would focus on Quayside specific issues. Quayside specific meetings of the IGSC would focus on tri-government co-ordination and communications of relevant policies that impact the Quayside project including, but not limited to: • Review initial pilot projects before proposals are formally submitted to approving government regulatory authorities; • Monitor and provide input to the public and stakeholder engagement plan; • Identify input on approval pathways for proposed project innovations; • Review proposed milestones and schedule; • Review and provide input on project-related risk management protocols; Quarterly meetings of the IGSC would be maintained and reserved for discussion of broader Waterfront Toronto issues including Port Lands Flood Protection updates, financial reporting and governance.
4.	Quayside Planned Development Agreement Update a. Process and timeline to receive comments on PDA	Meg Davis indicated that PDA discussions are going well. An updated outline of the PDA approval timelines and expected deliverables was provided. The target approval date by WT's Board of Directors of the PDA is July 31, 2018. The timeline also included a two-week period for government review and comment on the PDA culminating in a QESC/IGSC meeting on July 20th where final comments from governments would be provided. [redacted]

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		David Stonehouse also acknowledged the tight timelines to review the and suggested wherever possible that sections of the agreement be shared when they are ready and wherever feasible. [redacted]
5.	Master Innovation and Development Plan (MIDP) Update	The revised timeline for the MIDIP is now post December /early 2019. The draft should not have any surprises for governments as the plan is to continuously engage all orders of government. David Stonehouse The City of Toronto indicated that they would be required to undertake their own public consultation process as well as report to Council on the MIDP and the Quayside project once the plan was received. Given the focus on the budget in January and February at the City and the timing of delivery of the MIDP there may be some challenges with sequencing and timing. It is likely that any staff report would not be for approval of council but for information. That is yet to be determined. Glenn Campbell indicated that the IGSC will have a significant role to play – governments have a role to play in expressing their views and concerns but this should not inhibit the innovation that needs to happen on this project.
6.	Digital Strategy Advisory Committee Update	A 15-member Digital Advisory Panel has been created to help advise WT specifically on data governance and privacy issues. Discussion are ongoing with respect to mandate of the committee and how to operationalize it. The City asked whether the panel was engaging with the city as there are many synergies and potential "good news stories". WT should make an effort to reach deeper into city departments on this issue. WT indicated that City staff are being engaged and that discussions have occurred with the City CIO, several divisions, including clerks. Representatives from government have also been invited to participate in the panel.

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ATIA - 13(1)(c) ATIA - 20(1)(b)
ATIA - 13(1)(d) ATIA - 20(1)(c)
ATIA - 21(1)(b) ATIA - 20(1)(d)

7.	Public Engagement Update	Carol Webb and John Brodhead indicated that it was moving the planned July 11th roundtable – the third in a series - to mid-August. Date to be confirmed. While August is not an ideal time of year it is necessary to continue the consultation process to avoid to large a gap since Roundtable #2 in May. The topics to be covered will be non-controversial in nature, potentially public realm, buildings and streets but TBC. If approved, WT is targeting an early August release of the PDA – shortly after the July 31st Board meeting. A communication roll out strategy for the PDA release is being developed. In addition, an examination of the pros and cons of also releasing the Framework Agreement at the same time or shortly after the PDA is being undertaken. Josh Sirefman reaffirmed that it has no issue with the release of the Framework Agreement. John Brodhead indicated that "307" will be opening June 16th and will feature an open house. 307 is SWL's new office and experimental workspace that will explore the many ideas and potential technologies that could become part of Quayside. It is an opportunity to engage the public to generate interest in feedback and a venue to generate new ideas form the community and workshop ideas together.
8.	Any other business:	No other business. The meeting moved in camera. SWL was excused from the meeting.
[redacted]		

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ATIA - 20(1)(b)
ATIA - 20(1)(c)
ATIA - 20(1)(d)

[redacted]

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ATIA - 13(1)(c) ATIA - 21(1)(a)
ATIA - 13(1)(d) ATIA - 21(1)(b)

Cariaga, Flordeliza (INFC)

From: Faraday-Smith, Nancy (INFC)
Sent: February 25, 2019 11:05 AM
To: Campbell, Glenn (INFC)
Cc: Tippins, Shawn (INFC); INFC.O IPI.admo-BSMA.IPI O.INFC
Subject: MIDP deep dive summary - Friday Feb 22nd
Attachments: FEB14-SWTO-Business-Case-Overview.pdf; WT Exec brieifing MIDP Vol III (2).pdf

Importance: High

Glenn,

Below is an updated summary of the deep dive meeting on Friday between tri-government partners and Waterfront (Meg Davis/Kristina Verner) and, later, including Sidewalk (Josh Sirefman, SWL Head of Development). The following highlights main issues from the WT and SWL presentations (see attached) and pulls out key messages conveyed/positions articulated.

[redacted]

B) SIDEWALK PRESENTATION

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- Josh Sirefman provided a project overview update (largely the deck that was leaked to public last week), moving quickly to business case elements given focus of governments' interest. Key transaction elements of the Business Case outlined in the SWL presentation (attached) include:
  - Design a “win-win” structure in which the economic incentives for government and Sidewalk are aligned and transparent
  - Ensure that experimentation and prototyping remain core to the project, while protecting government and the public from unreasonable downside risk
  - Limit Sidewalk’s role to the minimum amount necessary needed for the project to achieve its objectives to the fullest, and ensure third-party participation— particularly in real estate development
  - Create a structure that enables Sidewalk to shoulder the burden of upfront risk, and be compensated in later stages
  - Whenever possible, create discrete deal components in order to simplify and de-risk the transaction
  - Whenever possible, utilize financing and implementation mechanisms based on precedents that have been validated previously, particularly in Toronto
  - Incorporate stage gates and specific metrics for accountability



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Key Objectives

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SIDEWALK LABS

Waterfront Toronto, the three levels of government, and Sidewalk Labs have certain objectives that must be aligned in order to unlock the Eastern Waterfront and enable the city to realize the area's untapped potential.



What We've Heard: Policy Objectives

- **Strong economic growth and thousands of new jobs** while protecting existing industries in the Eastern Waterfront, including film
- **Substantial increase** in affordable housing
- **A series of other public policy outcomes** to address certain urban challenges, including sustainability and congestion

What We've Heard: Deal Objectives

- **Build off success**—prove the model
- **Adequate government control** to ensure the best outcomes for citizens
- **Ensure the local development community** plays a prominent role in developing the Eastern Waterfront
- **Appropriate standard** for data and privacy

Sidewalk Labs Objectives

- **Sufficient scale** to achieve its objectives and prove the ability of its approach to positively impact urban quality of life
- **Adequate return** on its investment

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What Sidewalk Can Uniquely Bring

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SIDEWALK LABS

Sidewalk was formed to function at the intersection of urban planning, technology, and policy. The team we have brought together and the operating model we have developed reflect a unique set of capabilities.

Approach to Innovation, incorporating both physical planning and a technology roadmap, that includes a series of key innovations and technologies while creating the conditions for others to build on

Investment in Economic Development including the catalytic impact of Google jobs, and support for an urban innovation cluster

Patient Capital that has a different return profile and objectives than both traditional real estate and traditional venture investing, enabling more robust R&D than typical urban development

Innovative Infrastructure Financing that fills a gap in the capital markets, and creates a path for infrastructure delivery that both proceeds at a rapid pace and achieves ambitious sustainability and quality of life goals



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Sidewalk as Catalyst

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SIDEWALK LABS

Sidewalk Labs aims to fill gaps that the public and private sectors are currently unable to fulfill themselves, to help deliver a series of outcomes that meet the shared objectives of all stakeholders. This reflects the feedback we have received from stakeholders in Toronto—to act as catalyst and do the minimum amount necessary for the project to flourish while creating the conditions for others to build on.



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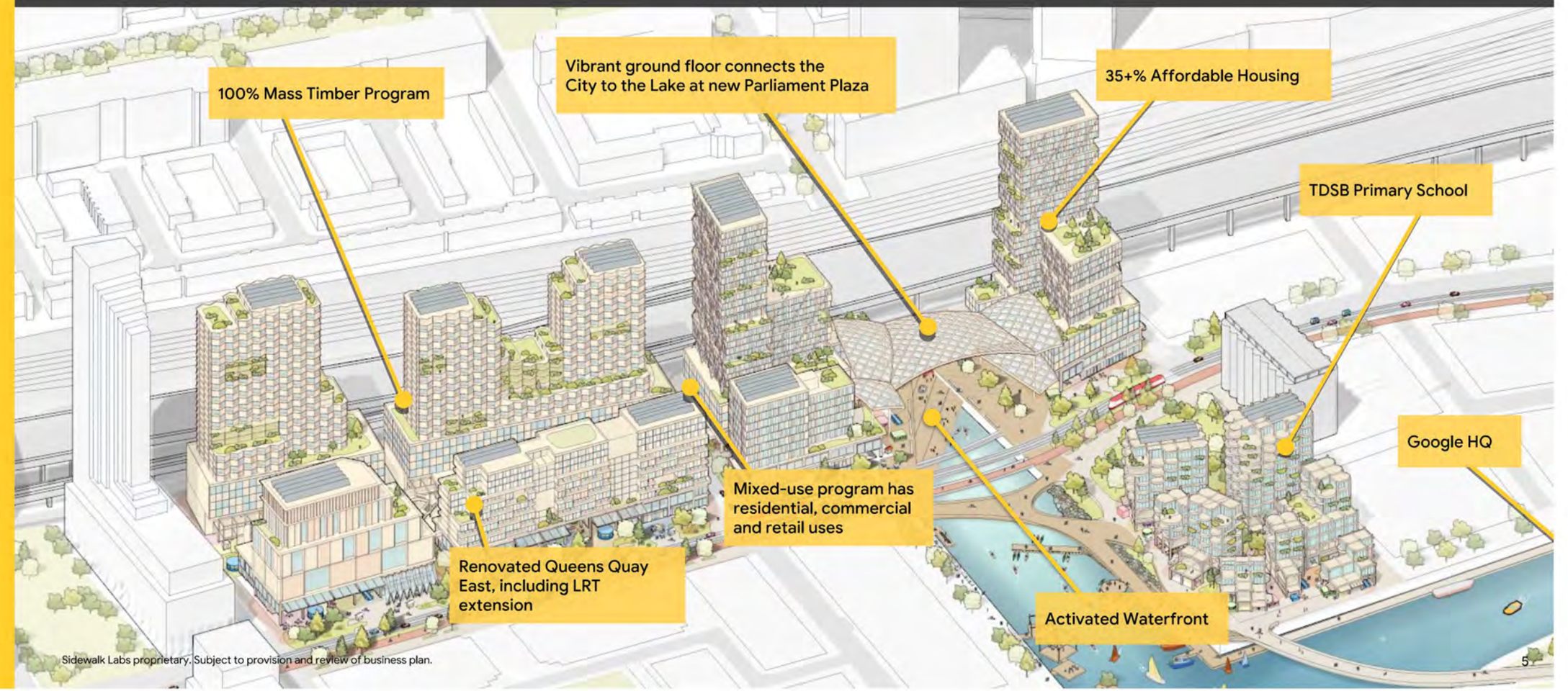
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New Approaches to Urban Development

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SIDEWALK LABS

Quayside will be the beginning of a new approach to urban development on Toronto's Eastern Waterfront that sets a new standard for urban development in the 21st century.



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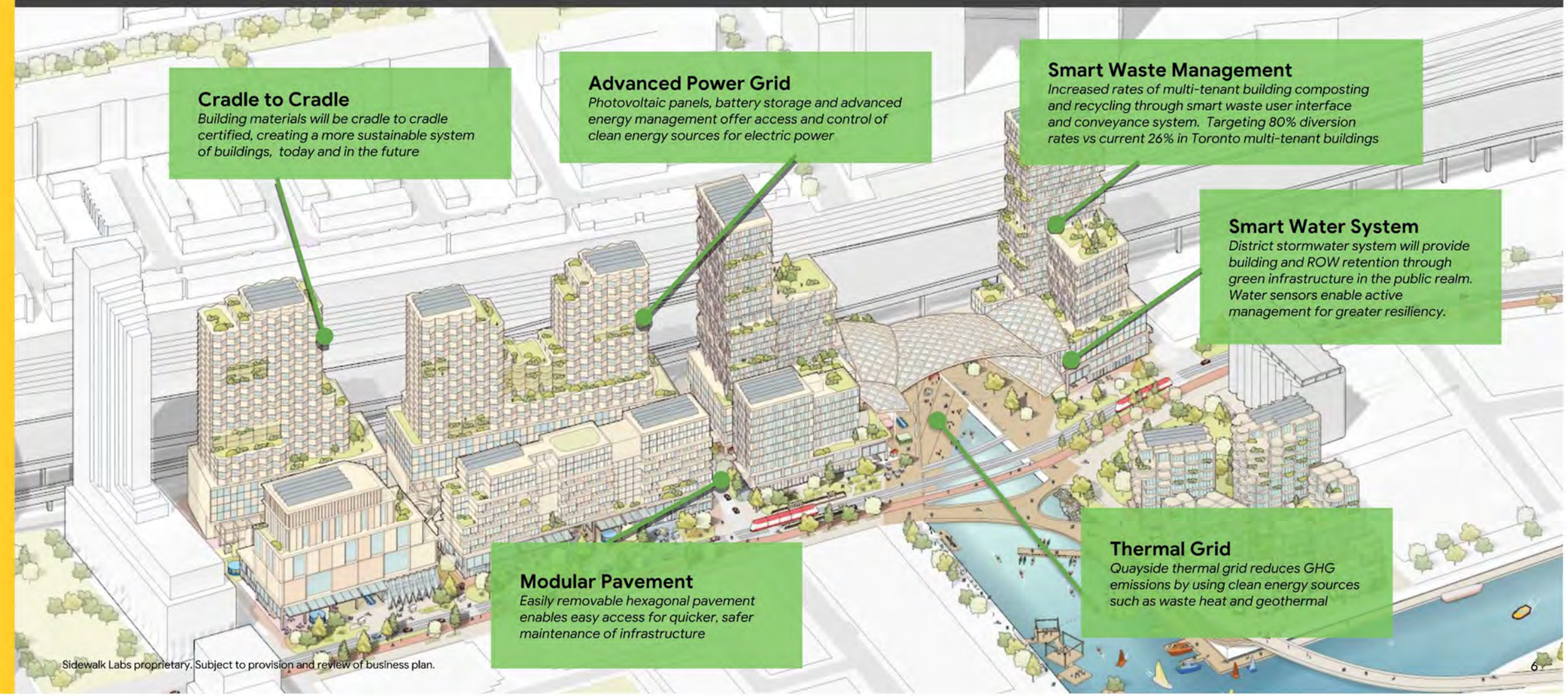
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Starting the Path to Climate Positive

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SIDEWALK LABS

At Quayside, Sidewalk Labs will invest in a series of innovations that drastically reduce the level greenhouse gas (GHG) emissions, enable smarter management of resources, and reduce the cost of future upgrade and maintenance to the system.



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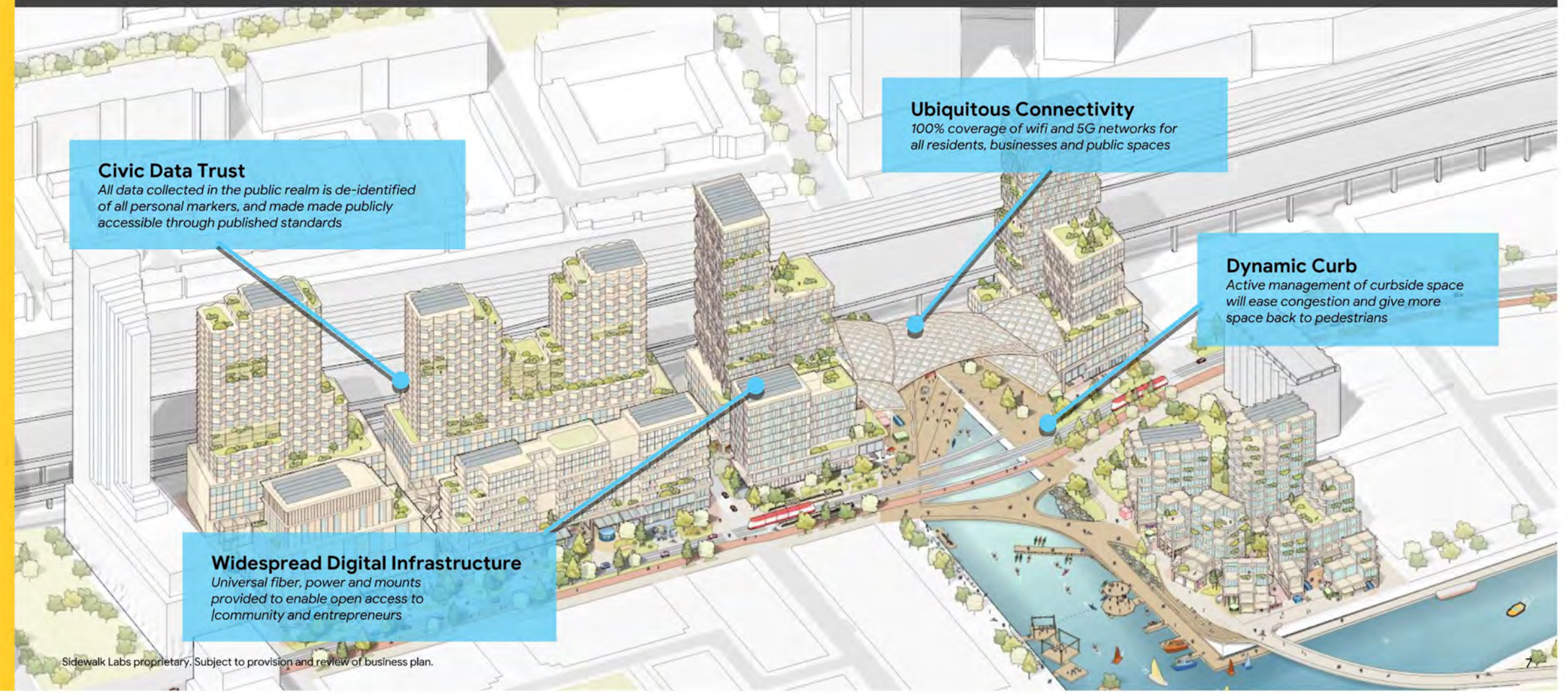
FEBRUARY 2019 PROJECT UPDATE

Piloting Digital Innovations

Quayside will be a fully connected neighbourhood and a testbed for digital innovations within Sidewalk Toronto's responsible data use framework.

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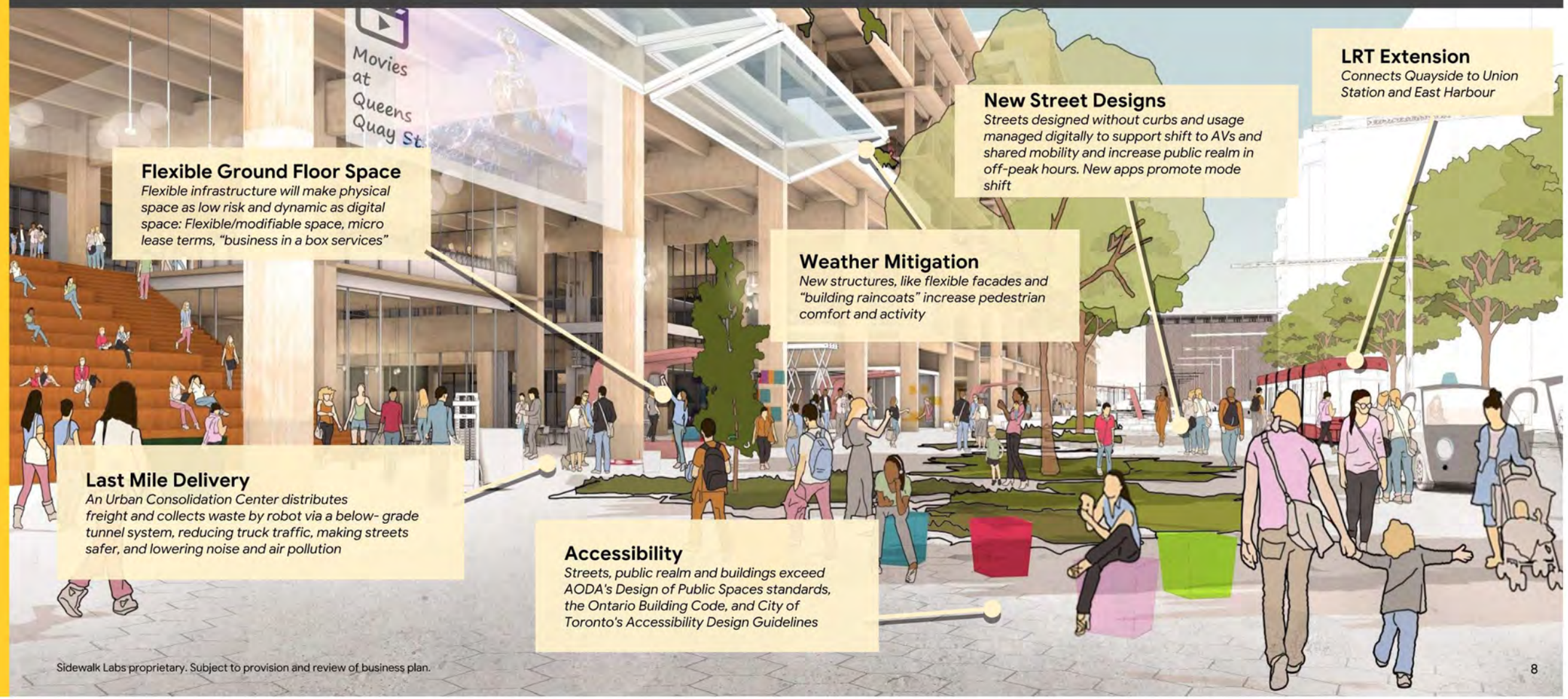
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Testing New Mobility & Enhanced Public Space

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SIDEWALK LABS

Innovations in mobility management and building systems, combined with great urban design will create porous ground floor space that breaks down barriers between different uses and prioritizes the pedestrian experience.



Flexible Ground Floor Space
Flexible infrastructure will make physical space as low risk and dynamic as digital space: Flexible/modifiable space, micro lease terms, "business in a box services"

New Street Designs
Streets designed without curbs and usage managed digitally to support shift to AVs and shared mobility and increase public realm in off-peak hours. New apps promote mode shift

LRT Extension
Connects Quayside to Union Station and East Harbour

Weather Mitigation
New structures, like flexible facades and "building raincoats" increase pedestrian comfort and activity

Last Mile Delivery
An Urban Consolidation Center distributes freight and collects waste by robot via a below- grade tunnel system, reducing truck traffic, making streets safer, and lowering noise and air pollution

Accessibility
Streets, public realm and buildings exceed AODA's Design of Public Spaces standards, the Ontario Building Code, and City of Toronto's Accessibility Design Guidelines

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FEBRUARY 2019 PROJECT UPDATE

A New Economic Engine for Toronto

We believe the project can make Toronto the global hub in the field of urban innovation, catalyzing thousands of new jobs and generating billions in investment.

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SIDEWALK LABS

Economic growth within the project geography, and Toronto more broadly, would be driven by a series of key components:

- **Significant increase in Google jobs over 10 years in the Eastern Waterfront as an initial catalyst**
- **An Urban Innovation Institute,** leveraging the unique physical and digital infrastructure in Sidewalk Toronto to do cutting edge research, incubate new startups, and cultivate the next generation of urban innovators, would be a second catalyst. Sidewalk is prepared to make an initial seed investment to create the Institute.
- Together these two catalysts will spark a **cluster in urban innovation,** drawing entrepreneurs and companies from around the world to the laboratory on Toronto's Eastern Waterfront
  - ***EXAMPLE:* Sidewalk's commitment to Mass Timber** would accelerate step-change growth in the forestry, design and timber manufacturing industries
  - ***EXAMPLE:* Sidewalk's unique approach to ground floor space,** a flexible building system we call "Stoa", would enable a unique range of ground floor uses that encourage small business and entrepreneurship growth within mixed-use neighbourhoods

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- **Sidewalk has commissioned an independent third party, UrbanMetrics, to complete an Economic Impact Report on the Sidewalk Toronto Project,** which will include estimates for job creation, both construction and ongoing investment, GDP growth, and incremental city revenues. We look forward to sharing that report upon its completion.



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Google Canadian HQ

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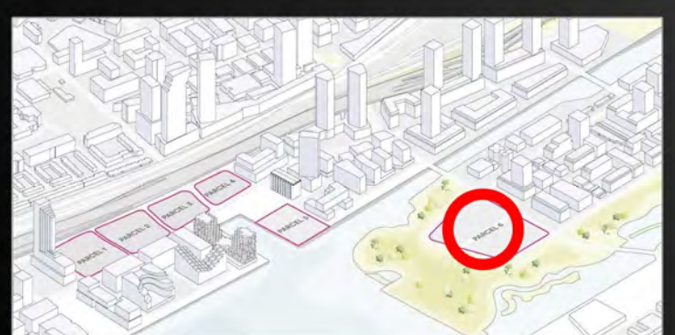
SIDEWALK LABS

An new economic cluster on the Eastern Waterfront would be anchored by a significant commitment of Google jobs located at a campus on Villiers Island.

We have explored a series of design options for a Google Campus, including an approximately 1.5M–2M SF location on the western side of Villiers Island, located on a planned LRT stop.

This campus would have seats for a significant increase of Google jobs.

Within a brand new campus we imagine including a 600K–1M SF headquarters, integrated with a mix of other uses and amenities (commercial partners, retail, education, non-profit).





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A New Standard for Affordable Housing

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SIDEWALK LABS

Our targets for affordable housing on Quayside and Villiers West would increase the provision of affordable housing by almost 4x compared to usual waterfront development in Toronto, and serve a much broader portion of the population.

More Affordable

40% Below Market Housing

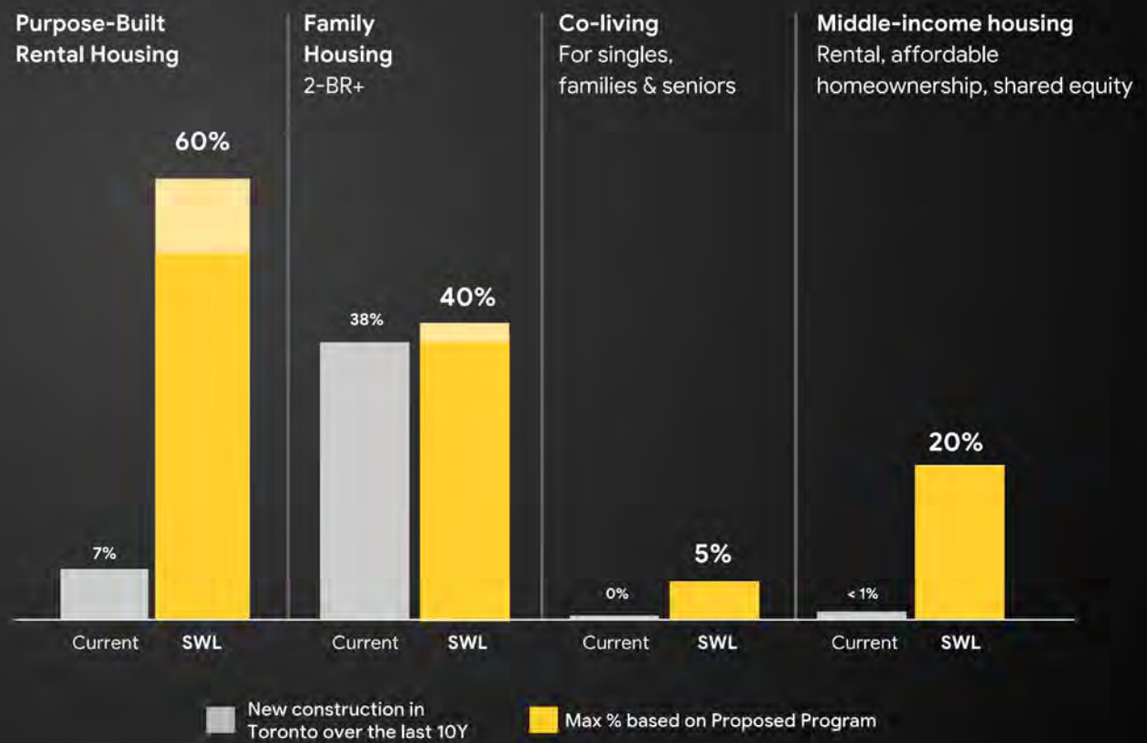
20%
affordable
Including 5% deep affordability

Up to
20%
middle income
Including up to 15% affordable rental and 5% shared equity

COMPARE TO
8% of total Toronto housing stock as affordable and social housing

COMPARE TO
<1% of total Toronto housing stock as affordable homeownership today

More Options



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A New Standard for Data and Privacy

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SIDEWALK LABS

Data can play a role in improving the day-to-day operation of the neighbourhood, leading to a more sustainable, accessible and responsible place to live. Sidewalk Labs will receive no special treatment and will not sell personal information or use it for advertising purposes.

Civic Data Trust

An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Labs.

RDUA

Responsible Data Use Assessment

Publicly auditable assessment for all public and private digital services required before data is collected and used.

A New Global Standard for the Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

Open Standards

Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation.

RDU Guidelines

Responsible Data Use Guidelines

Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation.

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Quayside in Context

The economic and conceptual viability of many elements of the Quayside site plan may only be possible at a larger scale.

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Thinking at Scale

- From the RFP through the PDA, Waterfront Toronto has always sought solutions to address how we can maximize the impact of the shared objectives of the City, Province, Waterfront Toronto, and Sidewalk Labs, and we have responded as such.
- We believe that while Quayside will be an impactful starting point, scale actually plays a significant role because:
  - The impact of each individual innovation increases (for example, additional affordable housing, greater synergies in cutting carbon emissions, greater ability to reduce car trips, greater catalyzation of the tall timber industry)
  - Greater scale than 12 acres is likely needed given the initial investment in prototypes at Quayside
  - Holistic thinking is what can accelerate the provision of infrastructure on the Eastern Waterfront, and more quickly unlock the value of the Port Lands envisioned in the Port Lands Planning Framework
- Scale means different things for different outcomes and investments.

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Impacts that Can Only Be Achieved with Scale

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The impact of Individual systems increases exponentially as the scale of the project increases.

Buildings	Mobility	Active Ground Floor	Sustainability	Freight
				
Meaningful reductions in costs (critical to achieving aggressive housing affordability savings) using factory-built timber buildings only works at scale.	AVs only work at scale, enabling the achievement of mobility-as-a-service and lower family transportation costs	Retail model enabling a much more dynamic retail environment and opportunity for small business built on Stoa and new building typologies only works at scale.	Achieving climate positive and building savings in energy costs with the thermal grid only are achieved at scale.	Business model for an Urban Consolidation Center and freight tunnels works at scale

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Transaction Principles

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SIDEWALK LABS

In designing a conceptual framework for an overarching transaction, Sidewalk Labs has followed a set of principles designed to meet all parties' objectives.

Transaction Principles

- Design a "win-win" structure in which the economic incentives for government and Sidewalk are aligned and transparent
- Ensure that experimentation and prototyping remain core to the project, while protecting government and the public from unreasonable downside risk
- Limit Sidewalk's role to the minimum amount necessary needed for the project to achieve its objectives to the fullest, and ensure third-party participation— particularly in real estate development
- Create a structure that enables Sidewalk to shoulder the burden of upfront risk, and be compensated in later stages
- Whenever possible, create discrete deal components in order to simplify and de-risk the transaction
- Whenever possible, utilize financing and implementation mechanisms based on precedents that have been validated previously, particularly in Toronto
- Incorporate stage gates and specific metrics for accountability

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An IDEA District on the Eastern Waterfront

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SIDEWALK LABS

The City of Toronto would create an "Innovative Development and Economic Activation District" —an IDEA District— corresponding to the project geography, to create the governance necessary to implement the Project. Waterfront Toronto would be the administrator of this district.

The IDEA District would leverage the combination of three elements to deliver on the project's public policy objectives:

1. A newly empowered Waterfront Toronto in an oversight and administrative role
   - Defined mission to promote innovation and development within the geography, and the mandate to oversee and steer key real estate, infrastructure, and technology decisions.
   - To be effective, this administrator must be accountable to the public; receive well-defined powers over development activity and the deployment of infrastructure within the jurisdiction; and engage seamlessly with other government agencies.

2. A custom set of regulatory, and policy tools—"An Innovation Framework"
   - A set of regulatory and policy tools (across categories like mobility, sustainability, housing, buildings) designed to foster the necessary conditions for delivering on the promise of the MIDP and using its success as a catalyst for spurring economic growth throughout the waterfront
   - 3 categories of reforms: (1) targeted relief from requirements (e.g., reduce parking requirements); (2) enhanced requirements for new developments (e.g., on-going performance targets related to carbon emissions); (3) legal authorization for management entities (e.g., a non-profit public realm management entity)

3. A special set of financing tools that enable the project to leverage its own value for implementation.
   - Financing tools could address project value created through development charges, incremental property tax, and increased land value

All three levels of government would determine the contours of the IDEA District in the course of its establishment.

As Innovation and Funding Partner to Waterfront Toronto, Sidewalk Labs would assist in achieving ambitious policy goals and accelerate development throughout the IDEA District.

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Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (Summary)

As Innovation and Funding Partner, Sidewalk Labs' role—and corresponding business models—is best summarized in discrete components:

1. Planning Partner
2. Real Estate Research and Development
3. Real Estate Economic Development Catalyst
4. Infrastructure Financing
5. Horizontal Development Partner
6. Advanced Infrastructure Facilitator
7. Technology Deployment
8. Investments in Economic Development
9. Value Sharing

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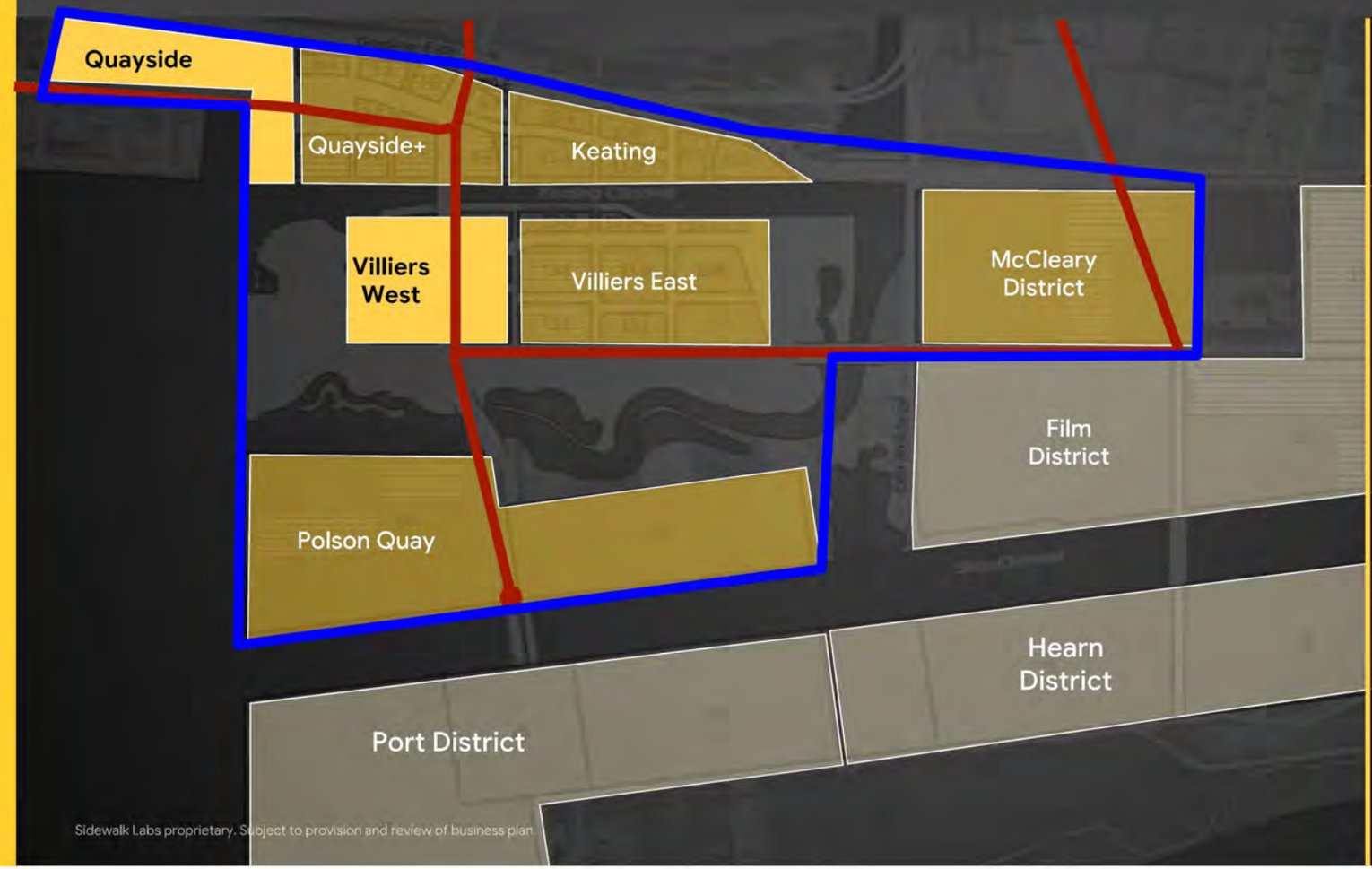
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FEBRUARY 2019 PROJECT UPDATE

Project Concept

This document represents concepts and proposals developed by Sidewalk Labs in consultation with a variety of stakeholders. All such concepts and proposals are subject to approval by many of those same stakeholders, including but not limited to public entities, and Alphabet Inc.

SIDEWALK LABS



PROJECT SCOPE

Phase 1 (Quayside)

- 12 acres
- 3M SF
- ~5,000 residents (3,000 units of housing)
- ~3,900 jobs "on site"

Phase 1+2 (Complete Project)

- 190 acres
- 35M SF
- ~50,000 residents (33,000 units of housing)
- ~45,000 jobs "on-site"

IDEA District

SWL executes horizontal and real estate development

SWL facilitates horizontal infrastructure only

SWL facilitates the Phase 1 LRT extension

***Note**: In total, Sidewalk Labs proposed to complete ~5M SF of real estate development, only ~15% of the total project*

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (1 of 4)

Role		Description	Business Model
1	**Planning Partner**	In this role, Sidewalk Labs would support Waterfront Toronto in its role as IDEA District Administrator during the planning phases for each neighbourhood. This would include collaboration on: • The overarching Innovation Framework and updates, Precinct Plans, Master Infrastructure Plans, guidelines for individual parcels and development agreements with third-party real estate developers	• Contractual relationship with Waterfront Toronto • Sidewalk Labs to receive payment for its advisory role
2	**Real Estate Research and Development**	In this role, Sidewalk Labs would develop, in partnership with local development entities, approximately 3.0M SF at **Quayside**. The explicit mission of this development would be to prototype innovations or programmatic decisions that would achieve WT's objectives, but, because they go against market pressures, would likely lead to a below market return. The current development plan includes approximately 3,000 units of housing (40% below market), room for 3,900 jobs, buildings entirely of tall timber, an expanded park network including the proposed Silo Park, a renovated Parliament Slip, and next generation infrastructure systems including: digital electricity, a thermal grid, and consolidated waste removal.	• Traditional real estate development economics • Land price to be negotiated with Waterfront Toronto • Profit-sharing with Waterfront Toronto if returns exceed certain threshold
3	**Real Estate Economic Development Catalyst**	In this role, Sidewalk Labs would develop, in partnership with local development entities, approximately 2.7M SF at **Villiers West,** relocating Google's Canadian HQ to the site. The explicit mission of this development would be to create outsized economic growth through the relocation of the Google HQ into a mixed-use, open campus with multiple corporate tenants.	• Traditional real estate development economics • Land price to be negotiated with WT / City • Profit-sharing with WT / City if returns exceed certain threshold

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (2 of 4)

Role		Description	Business Model
4	**Infrastructure Financing**	In this role, Sidewalk Labs would fill a critical financing gap needed to deliver the full suite of infrastructure systems necessary to develop Quayside and the Eastern Waterfront on an accelerated schedule and achieve Waterfront Toronto's sustainability objectives. Even beyond the in-progress $1.2B Don Mouth Naturalization Project flood protection, billions of additional investment in enabling infrastructure—LRT, plus systems like electricity, heating, water and sewage, road networks, and fiber, new parks and public space, and extensive environmental remediation—would be necessary for complete communities to grow on the waterfront. Were the status quo to proceed, this infrastructure would likely be implemented piecemeal and incrementally, as funding became available through either government allocations or as City Development Charges were realized in initial phases of Eastern Waterfront development. Sidewalk estimates that if Toronto were to create a "value-capture zone" in which Development Charges and incremental property taxes were reserved for this specific geography, it could generate **~$6B in value** from the Project to pay for necessary infrastructure over the next ~30 years. However, these traditional sources will not be available at the time needed to construct this infrastructure at the pace and scale required to deliver the outcomes WT desires, nor to achieve some of the more ambitious policy objectives. As such, Sidewalk Labs **will bridge this gap in two ways**: 1) Providing financing in advance of public funds being available for infrastructure projects like the LRT, parks, and utility systems. 2) Providing OPTIONAL "stapled financing" for Advanced Infrastructure systems that require innovative funding and operational models to achieve policy objectives	1) Sidewalk would be paid back on all equity commitments used to bridge the gap between the time funds were needed to begin construction and funds were available from the project A financing fee would be applied to these funds The funds used to pay back Sidewalk in this capacity would be either the Development Charges or Incremental Property Taxes allocated to fund the associated infrastructure project 2) Advanced Infrastructure Systems would be operated through third-party entities, often in partnership with current operators (like Toronto Hydro). Third-parties operators would be chosen by an open RFP process, and all respondents would have the OPTION of choosing to use Sidewalk Labs-provided funding as part of their approach. Sidewalk would receive contractual-based market economics if respondents elected to use this "stapled financing."

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (3 of 4)

Role		Description	Business Model
5	**Horizontal Development Partner**	In this role, Sidewalk Labs would support Waterfront Toronto in its role as IDEA DIstrict Administrator during the infrastructure implementation phases for each neighbourhood. This would include collaboration on: • Delivery of systems such as parks, utility systems, site preparation work Division of responsibilities between the two organizations generally fall to each organization's strengths. Waterfront Toronto would provide operational excellence in line with what it delivered in past projects—flood mitigation, West Don Lands, Bayside. Sidewalk Labs would provide design support, as well as manage the coordination of funding, and innovative project elements. **Note:** This role can be shaped to meet the needs of all parties. From Sidewalk's perspective, a critical issue is the ability to have influence over the timing and management of the delivery of projects for which Sidewalk Labs' "bridge" financing is directly funding	• Waterfront Toronto and Sidewalk Labs would split a traditional "Developer Fee" applied to the total infrastructure cost, split in proportion to the allocation of responsibilities and associated resource requirements
6	**Advanced Infrastructure Facilitator**	In this role, Sidewalk Labs would conduct initial design work, craft the RFP process, and coordinate the implementation among each Advanced Infrastructure system to ensure adherence to the project's innovation objectives.	• Sidewalk Labs to be reimbursed for costs related to initial design work and managing the RFP process. • These costs will be allocated on a system by system basis and reimbursed by the operators selected for each system

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SIDEWALK LABS

Transactional Framework: Sidewalk Labs as Innovation and Funding Partner (4 of 4)

Role		Description	Business Model
7	**Technology Deployment**	In order to deliver on the project objectives, Sidewalk Labs would deploy a limited set of critical technologies. These technologies would be categorized as Purposeful Solutions, for which Sidewalk Labs and Waterfront Toronto would enter into agreements under predetermined and unique procurement and contractual rights.	• Rights to prototype, test, and deploy negotiated on an individual basis with WT or relevant agency • Value from IP created in "testbed" conditions shared with public entities
8	**Investments in Economic Development**	In order to capitalize on, and catalyze, the enormous economic potential inherent in the vision of the Project, Sidewalk Labs will invest in a series of economic development initiatives that will benefit both the project area and Toronto writ-large. Category 1 Investments: Google HQ; Urban Innovation Institute; Workforce Development Initiatives Category 2 Investments: Tall Timber Factory, Toronto-based Venture Fund	Category 1 *No specific, direct return to Sidewalk Labs* Category 2 *These investments have their own economics.*
9	**Value Sharing**	Because of the holistic value Sidewalk Labs is bringing to the project across the first 7 buckets on this chart, Sidewalk Labs would share in the incremental value created within the overall project geography through the disposition of publicly-held lands to third parties in the project geography. In particular, buckets 1,2,4,6, 7, and 8 reflect economic constructs for which Sidewalk Labs is deploying capital / resources at below market rates of return, and deferring any possible return on investment to the potential long-term value created through its partnership with WT.	When public land within the IDEA District is sold to third-party developers through a WT-managed public RFP process, the incremental value would be split in a TBD negotiated proportion between Government parties and Sidewalk Labs

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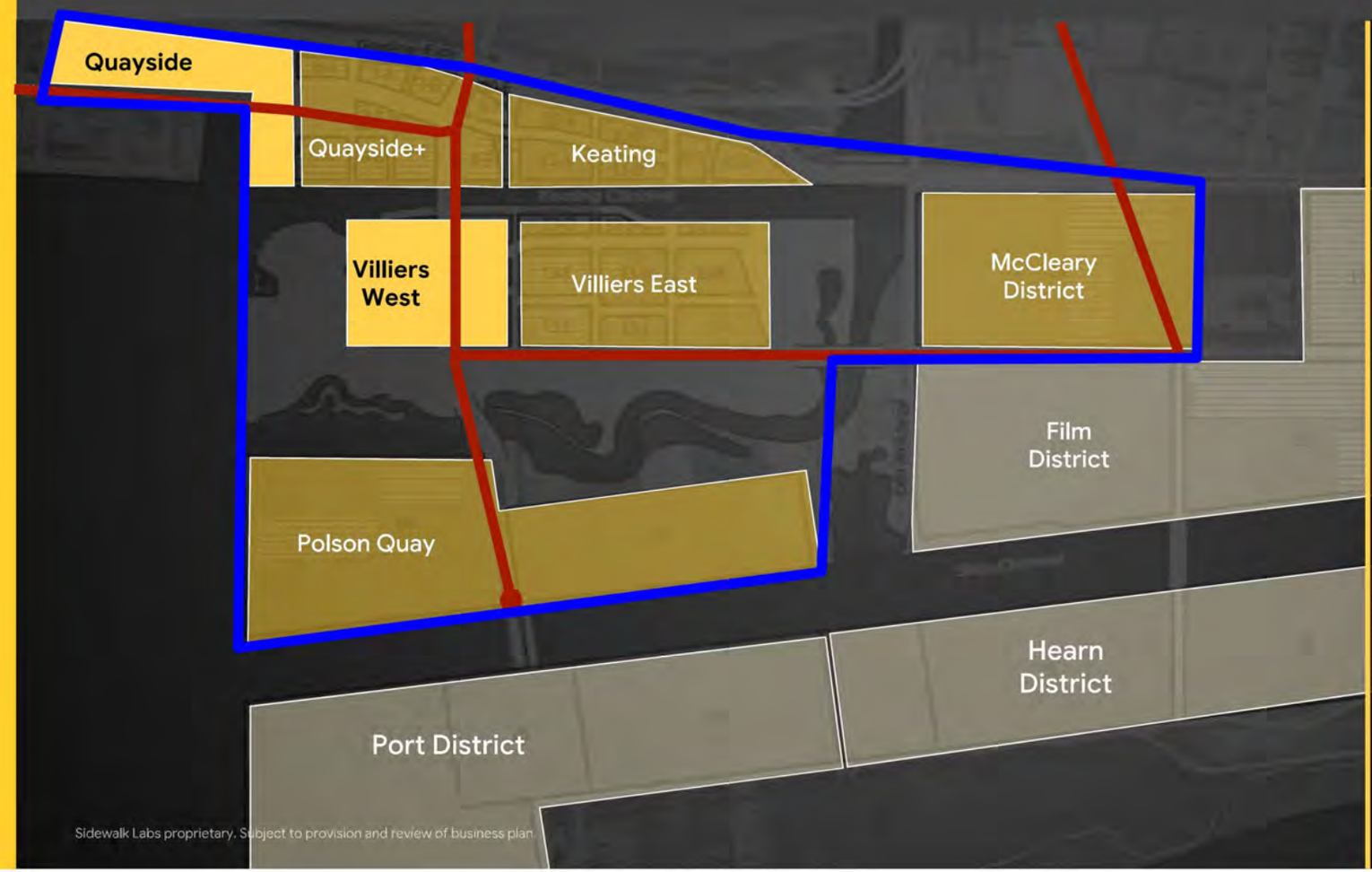
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FEBRUARY 2019 PROJECT UPDATE

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SIDEWALK LABS



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Phase 1+2 (Complete Project):

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IDEA District

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FEBRUARY 2019 | PROJECT UPDATE

Potential Phase 3 Expansion (Dual Option)

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SIDEWALK LABS

In a potential Phase 3, the IDEA District would extend to south of the Ship Channel and there would be a mutual option for Toronto and Sidewalk Labs to deliver additional enabling infrastructure, including an extended LRT. The East Port and Film District have been excluded to protect existing uses.



PROJECT SCOPE:

Phase 3 (Port Lands South):

- 160 acres
- 15M SF
- ~25,000 residents (17,000 units of housing)
- ~25,000 jobs "on site"

Phase 1+2+3 (Extended Project):

- 350 acres
- 50M SF
- ~75,000 residents (50,000 units of housing)
- ~70,000 jobs "on-site"

Extended IDEA District

SWL executes horizontal and real estate development

SWL facilitates horizontal infrastructure only

SWL facilitates the Phase 1 LRT extension

SWL facilitates the Phase 2 LRT extension

Note: *Sidewalk Labs proposes no additional SWL real estate development in Phase 3*

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Ensuring Accountability: Milestones & Phasing

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SIDEWALK LABS

As the project proceeds, we believe permission for the the IDEA District to expand should be rooted in the ability of the initial neighbourhoods to achieve stated objectives.

A potential construct to expand the zone for which the innovation guidelines apply within Phases 1+2 would be based on specific targets:

- Stage gates, included as part of an initial set of agreements, would set the parameters that would need to be achieved in order to expand the project geography. These could potentially include:
  - Number of units of below market housing
  - Delivery of key infrastructure components by a given date



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Pages 117 to 126
are withheld
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of the *Access to Information Act*

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Les pages 117 à 126
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c), 20(1)(d)
de la loi sur l'accès à l'information

ATIA - 21(1)(a)
ATIA - 20(1)(b) ATIA - 21(1)(b)

Cariaga, Flordeliza (INFC)

From: Faraday-Smith, Nancy (INFC)
Sent: December 10, 2018 8:32 PM
To: Campbell, Glenn (INFC)
Cc: Tippins, Shawn (INFC); Boudreau, Marcia (INFC); Ladouceur3, Natalie (INFC)
Subject: summary of MIDP pillar overview and discussion @ WT
Attachments: [redacted]

Glenn –

As requested, a high-level summary of today's discussion. Not sure if you wanted to include the WT presentations (attached). They're referenced below (see highlight in case you wish to remove this part as may be too detailed for DM). Please let me know if more is needed.

Nancy

[redacted]

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[redacted]

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Pages 129 to 144
are withheld
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SCENARIO NOTE TO THE MINISTER

MEETING BETWEEN
MINISTER OF INFRASTRUCTURE AND COMMUNITIES AND
DAN DOCTOROFF

MEETING DETAILS

- **DATE/TIME**: Thursday, March 22, 2018, 12:15 to 12:45 p.m.
- **LOCATION**: Centre Block, Room 450-S
- **PARTICIPANTS**:
  - The Honourable Amarjeet Sohi, Minister of Infrastructure and Communities
  - Dan Doctoroff, CEO, Sidewalk Labs
  - Leslie O'Leary, Chief of Staff, Minister's Office
  - Mathieu Bélanger, Director of Policy, Minister's Office
  - Chike Agbasi, Special Assistant, Ontario, Minister's Office
  - Eric Poirier, Director, Smart Cities Challenge

ISSUE

- Dan Doctoroff will brief the Minister on Sidewalk Toronto, a joint venture by Waterfront Toronto and Sidewalk Labs.

HIGHLIGHTS/KEY CONSIDERATIONS

- Sidewalk Toronto is in its early stages, and this meeting is a good opportunity for the Department to learn about its plans to develop "Quayside" – a new technology-enabled neighbourhood – and how it will unfold, including the public consultation that is planned for 2018.

- This meeting is also a good opportunity to learn about Sidewalk Labs' broader vision as a company, which (in its words) "blends people-centered urban design with technology to achieve new standards of sustainability, affordability, mobility, and economic opportunity."

- Sidewalk Toronto is one of two major initiatives being undertaken by Waterfront Toronto. The other is the Port Lands flood protection project, for which contribution agreements representing the federal, provincial, and municipal governments' commitment of $1.25 billion is the process of being developed.

KEY BACKGROUND

- Sidewalk Labs was created by Google's parent company Alphabet to design, test, and build urban innovations. In a November 2017 announcement, which was attended by the Prime Minister, Waterfront Toronto selected Sidewalk Labs as its funding and innovation partner to develop Quayside – a new kind of mixed-use, complete community on Toronto's Eastern Waterfront. Sidewalk Labs created Sidewalk Toronto to undertake this work.

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- Sidewalk Toronto's objectives include: establishing a community that improves the quality of life for a diverse population of residents, workers, and visitors; creating a destination for people, companies, start-ups, and local organizations to advance solutions to the challenges facing cities, such as energy use, housing affordability, and transportation; making Toronto the global hub of urban innovation; and serving as a model for sustainable neighbourhoods throughout Toronto and cities around the world.

- Initial public reactions to Sidewalk Toronto are mixed. Concerns have been expressed around affordability, inclusion, privacy, data governance, and the privatization of urban planning. On the other hand, supporters point to the benefit of positioning Toronto at the leading edge of experimentation and urban innovation, as well as setting the standard for digital governance. It is expected that much of the focus of the joint planning and consultation process for which Sidewalk Labs has committed up to $50 million under the framework agreement will go toward airing out public viewpoints on these areas and addressing the concerns that have been raised.

- Another component of the framework agreement is the establishment of an Urban Innovation Institute, which will bring together academia (University of Toronto and Ryerson University) as well as industry, government, and entrepreneurs to address the growth challenges facing cities. The Institute will focus on a broad range of research in areas such as artificial intelligence, policy, governance, finance, and other relevant disciplines.

[redacted]

POINTS TO REGISTER

- I understand that Sidewalk has committed to spending $50 million for preliminary work. Looking further out, what is the overall magnitude of the investment that Sidewalk and Alphabet are prepared to make in the Toronto waterfront?

- You may know that I have launched a Smart Cities Challenge for Canada, in which communities will come forward with bold ideas to leverage data and connected technology to improve the lives of their residents. When our process yields winners in early 2019, there may be opportunities for the cross-pollination of ideas.

- Engagement, diversity and inclusion, and openness and transparency are important to me and the work of the Department. I would be interested in understanding how you view these objectives in relation to Sidewalk Toronto.

Annex A – Dan Doctoroff's biography

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ANNEX A

Mr. Dan Doctoroff
CEO, Sidewalk Labs



Dan Doctoroff is Chairman and CEO of Sidewalk Labs. Prior to joining Sidewalk Labs, Dan was President and Chief Executive Officer of Bloomberg L.P., the leading provider of news and information to the global financial community. During the seven years that he led the company, despite the 2008 financial crisis, Bloomberg's organic revenues nearly doubled.

Prior to joining Bloomberg L.P., Dan served as Deputy Mayor for Economic Development and Rebuilding for the City of New York. With Mayor Michael R. Bloomberg, Dan led the city's dramatic economic resurgence, spearheading the effort to reverse New York's fiscal crisis after 9/11 through a five-borough economic development strategy. This plan included the most ambitious land-use transformation in the city's modern history; the rebuilding of the World Trade Center site; the largest affordable housing program ever launched by an American city; and the formation of new Central Business Districts and Industrial Business Zones. Dan also oversaw the creation of PlaNYC, New York's path-breaking sustainability plan.

Before joining the Bloomberg administration, Dan was Managing Partner of the private equity investment firm Oak Hill Capital Partners. While at Oak Hill, Dan founded NYC2012, the organization that spearheaded efforts to bring the Olympic Games to the city.

Dan serves on the Boards of the University of Chicago, World Resources Institute, United States Olympic Committee, Bloomberg Philanthropies and Human Rights First. He is the founder of Target ALS, which raises funds for and has established a new model of collaboration to advance ALS research. He is a founder and chairman of Culture Shed, an innovative new cultural institution at the Hudson Yards in Manhattan.

Dan is a graduate of Harvard College and The Law School at the University of Chicago.

A native of Michigan, Dan has lived in New York for the past 32 years with his wife, Alisa. The Doctoroffs have three grown children.

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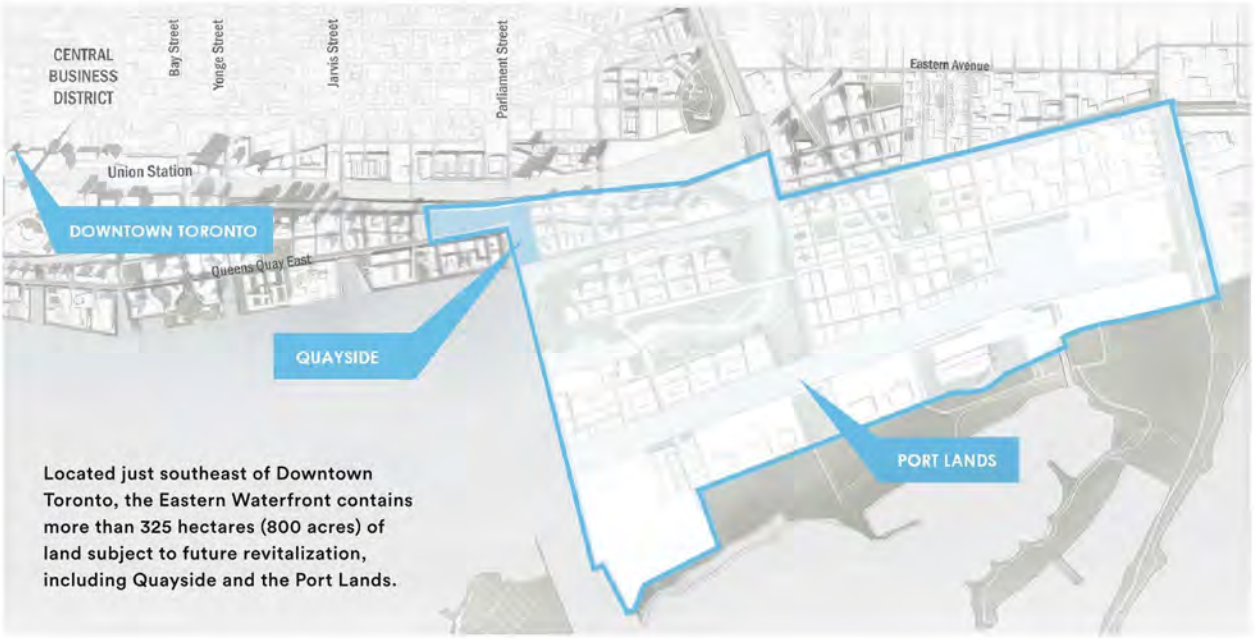
Press Backgrounder

About Sidewalk Toronto

Sidewalk Toronto is a joint effort by Waterfront Toronto and Alphabet's Sidewalk Labs to design a new kind of mixed-use, complete community on Toronto's Eastern Waterfront. Sidewalk Toronto will combine forward-thinking urban design and new digital technology to create people-centred neighbourhoods that achieve precedent-setting levels of sustainability, affordability, mobility, and economic opportunity.

Site

Sidewalk Toronto will begin with a new neighbourhood, called Quayside, located at Parliament Slip, just southeast of Downtown Toronto. Sidewalk Labs and Waterfront Toronto aim to bring the innovations advanced at Quayside to scale across the Eastern Waterfront, more than 325 hectares (800 acres) that represent one of North America's largest areas of underdeveloped urban land.



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Process

After exploring opportunities all over the world, Sidewalk Labs responded to a Request for Proposals issued in March 2017 by Waterfront Toronto that sought an innovation and funding partner for the Eastern Waterfront, beginning with the creation of a new neighbourhood called Quayside. Through this international call, Waterfront Toronto sought a partner with innovation ingrained in its culture to help re-imagine the conventional approach to city-building. Several local and international firms submitted responses to Waterfront Toronto's RFP, describing their vision, team strength and experience, and financial capacity. Following a rigorous evaluation process, Waterfront Toronto selected Sidewalk Labs.

In Sidewalk Labs, Waterfront Toronto found a kindred partner, one that has been deeply engaged in exploring solutions to the challenges in urban environments, including how to build inclusive, climate-friendly communities, improve quality of life and reimagine public spaces, and how technology can play a role in achieving these goals. Importantly, they recognize the value Toronto's local tech sector brings to the aspirations of the project and the role the community will play in shaping the neighbourhood of the future.

Objectives

- Establish a complete community that provides a superior quality of life for a diverse population of residents, workers, and visitors.
- Create a destination for people, companies, startups, and local organizations to advance solutions to the challenges facing cities, such as energy use, housing affordability, and transportation options.
- Make Toronto a global hub in a rapidly rising new industry of urban innovation.
- Serve as a model for sustainable neighbourhoods throughout Toronto and cities around the world.

Why Toronto?

Toronto is the world's most diverse city, a place where 51 percent of the population is foreign-born and 140 languages are spoken. That remarkable spirit of openness has made the city a beacon the world looks to, more with every day.

It's also led to incredible growth. Toronto is the fourth-largest city in North America, with a population of 2.9 million people in the city limits that is expected to grow by 35 percent in the next 25 years, and 6.7 million in the metro area expected to grow 42 percent over the same period. It has enjoyed enormous economic prosperity in recent years, including the rapid rise of its technology sector, which today employs 212,000 workers, with an emerging focus around artificial intelligence.

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But Toronto's growth has brought with it substantial challenges. Housing prices have more than doubled over the last 10 years, with average sales now exceeding $750,000. Its transit system has been unable to meet the demand created by the revitalization of neighbourhoods throughout the city. And like all cities, Toronto must find ways to reduce local energy use and greenhouse gas emissions and help address the global threat of climate change.

For these reasons and more, it's the perfect city to advance solutions to common growth challenges. And it has the perfect place to do it: the city's underdeveloped Eastern Waterfront, where Waterfront Toronto has the opportunity to align all three levels of government and the public around a visionary plan that will make Toronto a global leader in urban innovation.

The Vision

The Eastern Waterfront will be a new type of place that combines the best in urban design with the latest in digital technology to address some of the biggest challenges facing cities, including energy use, housing affordability, and transportation.

It will be a place that embraces adaptable buildings and new construction methods to make housing and retail space more affordable. A place where people-centred street designs and a range of transportation options make getting around more affordable, safe, and convenient than the private car. A place that encourages innovation around energy, waste, and other environmental challenges to protect the planet. A place where public spaces welcome families to enjoy the outdoors all day and all night and where community ties are strong. A place that's enhanced by digital technology and data, without giving up the privacy and security that everyone deserves.

Knowing that great neighbourhoods aren't planned from the top down, Sidewalk Toronto will create the conditions for a community to be built—and innovations launched—by people, companies, startups, academic centres, and local organizations over many years. Sidewalk Toronto aims to make the Eastern Waterfront the global hub of a new industry focused on urban innovation to improve the quality of city life, tapping into Toronto's already-thriving tech sector and developing innovations that could benefit communities and neighbourhoods elsewhere in the city. To help get started, Alphabet plans to move Google's Canadian headquarters to the Eastern Waterfront.

To help explain this vision and start a public conversation about the future of the Eastern Waterfront, Sidewalk Labs has released the vision laid out in its response to Waterfront Toronto's RFP, available at www.sidewalktoronto.ca. The response represents early thinking about what this district could look like—ideas we hope will now be shaped by a public conversation that involves all Torontonians.

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Public Engagement

Toronto is a city that the world calls home. Together we hope to make a neighbourhood that redefines city living, by creating the most inclusive, most liveable city on the planet. Our commitment to meaningful public engagement, collaboration, and co-creation puts people at the centre of Sidewalk Toronto. Combining the power of face-to-face conversations with the accessibility of digital tools, we are cultivating a more trusted and caring approach—one that celebrates and empowers a uniquely diverse city and the rich multiplicity of Torontonians. Together we hope to build a new kind of city for all of us.

Some of the values that inform our approach to engagement:

- Embracing diversity and difference across the Greater Toronto and Hamilton Area
- A belief that every resident should have a voice
- Working in good faith in service of the public good
- Ensuring our work is inclusive of and accessible to all
- Respect for continuous learning and the expertise of lived experience
- A belief that solving complex issues requires genuine collaboration

On November 1, 2017, we'll host a Town Hall where we'll ask you to join the conversation. Come out to share with us your ideas, your concerns, your hopes. The neighborhood of the future begins with all of us.

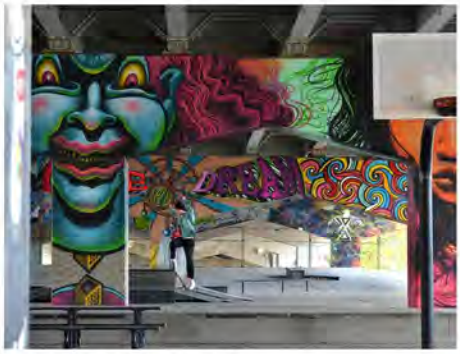
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About Waterfront Toronto

Waterfront Toronto sees the waterfront as a place that belongs to every Torontonian. As city builders, we care about creating neighborhoods, parks and destinations that make people's lives better. Our mission to revitalize Toronto's waterfront, with the support of the three orders of government, is allowing the development of groundbreaking solutions to some of Toronto's most pressing issues: urban sprawl, affordable housing, climate change, mobility, and economic growth. As a proponent of citizen-led change, we work with the people of Toronto to make sure waterfront development serves their needs.

With over 800 hectares (2,000 acres) of underutilized land along Lake Ontario, Waterfront Toronto is responsible for the largest waterfront revitalization in North America. Projects include the West Don Lands, Corktown Common, Underpass Park, Sugar Beach, Sherbourne Common, Queens Quay, the Port Lands, Jack Layton Ferry Terminal, and The Bentway.

Waterfront Toronto was established in 2001 by the Government of Canada, Province of Ontario, and the City of Toronto to unlock the social and economic potential of the waterfront by using best practices in urban revitalization.



Underpass Park, TORONTO



Corktown Common, TORONTO



Sugar Beach, TORONTO



West Don Lands, TORONTO

For more information on Waterfront Toronto, please visit www.waterfrontoronto.ca

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About Sidewalk Labs

Sidewalk Labs was created to explore how new technologies can solve big urban problems and improve quality of life in cities. Our unique team combines the urbanists who led New York City's post-9/11 revival with the technologists who made Google one of the world's most innovative companies. We believe in the power of emerging digital tools to help enhance social interaction and create people-centred cities, but we also bring a deep belief in the power of community plans, public input, and open collaboration—values forged by decades of experience working in local government.

Since Sidewalk's launch in 2015, its portfolio company Intersection has created the world's fastest and largest free public Wi-Fi network, LinkNYC, bringing super-fast connectivity to millions of New Yorkers and visitors. The Link system has since spread to London will come to other U.K. cities. Sidewalk has also incubated Flow, a company that uses data to enable new urban mobility services and solutions; Cityblock, a company that aims to improve healthcare services for underserved urban populations; as well as initiatives focused on planning data, intersection safety, and park improvements.

Before forming Sidewalk, members of our team led New York City's comeback after the attacks of 9/11. Sidewalk members transformed Manhattan's Far West Side into Hudson Yards, a booming new neighborhood enabled by smart investments in public transportation. We led the redevelopment of unused elevated freight track into the High Line, one of New York City's most popular and celebrated public parks. We designed PlaNYC, the pioneering citywide sustainability plan that made New York City a leader in fighting climate change. We opened Google's first engineering office outside Silicon Valley and helped jumpstart New York City's now booming tech ecosystem. And we imagined and built Cornell Tech, a new academic campus focused on technology and entrepreneurship.

Now, we are partnering with Waterfront Toronto, a group of dedicated public servants who have already helped transform the way Torontonians access the waterfront, to dream and build the neighborhood of the future in Quayside, with this vision ultimately scaling across the Eastern Waterfront.



Link NYC, NYC



The Highline, NYC



Cornell Tech, NYC

For more, visit www.sidewalklabs.com

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SCENARIO NOTE TO THE DEPUTY MINISTER

DINNER DISCUSSION WITH DAN DOCTOROFF, CHAIRMAN AND CEO, SIDEWALK LABS

MEETING DETAILS

- **DATE/TIME**: Thursday, October 25, 2018 (Time TBC)
- **LOCATION**: Executive Complex at ISED, 235 Queen Street, 11th floor
- **PARTICIPANTS**:
  - Dan Doctoroff, Chairman and CEO, Sidewalk Labs (see bio in **Annex A**).
  - Matthew Mendelsohn (co-host) (PCO)
  - Paul Thompson (co-host) (ISED)
  - Eric Dagenais (ISED)
  - Graham Flack (PCH)
  - Ava Yaskiel (FIN) *(in lieu of Paul Rochon)*
  - Stephen Lucas (EC)
  - Michael Keenan (TC)
  - Philip Jennings (NRCan)
  - Peter Wallace (TBS)
  - Siddika Mithani (PHAC)
  - Others (TBC)

PURPOSE

- Matthew Mendelsohn and Paul Thompson are co-hosting a dinner discussion with Dan Doctoroff and members of his Executive team (names as yet unknown). The purpose of the dinner is to learn about Sidewalk Lab's plans to reimagine Toronto's eastern waterfront as a smart city pilot, and how they see this vision being adopted in areas across Canada. This event affords an opportunity for Deputy Ministers to share perspectives on cities, urban design, digital technology and data.

HIGHLIGHTS/KEY CONSIDERATIONS

- Sidewalk is working with Waterfront Toronto on a development plan that would see the eastern waterfront Quayside area become a new technology-enabled neighbourhood where digital solutions and forward-thinking urban design could be tested and applied to improve the quality of life for people in cities (see further background in **Annex B**).

- This meeting presents an opportunity to learn how the Quayside project is unfolding in collaboration with Waterfront Toronto, and Sidewalk plans for public engagement on key aspects of the Quayside plan (e.g., data collection, governance, ownership as well as privacy) in advance of completing the Master Development and Innovation Plan (MIDP) in early 2019.

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- Sidewalk's broader vision as a company is to "blend people-centered urban design with technology to achieve new standards of sustainability, affordability, mobility, and economic opportunity" and they have signalled interest in partnering with governments on this vision. (see backgrounder on Sidewalk Toronto and Sidewalk Labs, also found at **Annex B.**

- Quayside is one of two major initiatives being undertaken by Waterfront Toronto. The other is the Port Lands flood protection project, for which a contribution agreement representing the federal, provincial, and municipal governments' commitment of $1.25 billion was signed on May 1, 2018, and will unlock a much larger piece of real estate for future development.

FEDERAL INTERESTS

- Sidewalk Labs proposal for the Quayside project (as set out in their Plan Development Agreement) aspires to address urban challenges in subject-matter areas relevant to several federal departments. These include:
    - **Transportation, Mobility, and Congestion (TC, ISED, INFC):** encouraging shared new mobility options such as self-driving electric vehicles that reduce the need for car-ownership and street space devoted to parking and cars; and using real-time detection to optimize street space, dynamically allocate the roadway network and improve safety.
    - **Data Governance (ISED, INFC):** create a world-leading responsible data use framework that established consistent, scalable, state-of-the-art policies and processes around privacy, data governance, access to data, data ownership and stewardship, information and data security that are consistent with local values and priorities.
    - **Economic Development (ISED):** foster economic development, job creation, future skills preparation and generate prosperity by catalyzing a world leading cluster focused on urban innovation; build on the emerging economic clusters, job creators and entrepreneurial and commercial communities on the waterfront and across Toronto and Canada; create opportunities for entrepreneurial companies developing new technologies consistent with delivering the goals and objectives of the project; and establish anchor drivers including the Google Canadian headquarters and an Urban Innovation Institute on the waterfront**.**
    - **Sustainability (EC, NRCan):** set a new standard for urban sustainability and a replicable path to climate positive communities through approaches such as the reduction of building energy use via design and data-driven energy management, the recovery and reuse of waste energy, the generation of onsite renewable energy and transformation of organic waste into energy, active waste and water management, and an adaptable utilities network.
    - **Housing Affordability (CMHC, NRCan):** creating new types of flexible and adaptable buildings that reduce costs and increase efficiency, sustainability, adaptability and affordability while still emphasizing architectural and design excellence.
    - **Inclusivity and Diversity (PCH)**: develop a toolkit to serve as a global example for the creation of affordable, diverse, mixed income, and multigenerational communities, composed of innovative programs, policies, business models, and existing programs that make housing more available and affordable for all Torontonians.

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- While many of the above-noted subject matters have raised general interest and little concern from Toronto residents, significant issue have arisen around privacy and data in a smart cities context. The main concerns include: surveillance; data collection; data sharing and selling; intellectual property; data storage, including where and for how long; and privacy – including anonymized data and the risks of re-identification. These concerns have garnered significant media attention and statements by those both opposed to and more in favour of Sidewalk's involvement in the Quayside development continue to play out in public.

- There is a broader public policy dialogue taking place on digital technology and data, including national consultations recently concluded by ISED, with INFC supporting as it relates to touchpoints with the Toronto Waterfront Revitalization Initiative.

- As it may pilot first-to-market technologies, the Quayside project is expected to generate much larger, at scale, proposals that will need to be weighed against current policies at federal, provincial and municipal level. More broadly it may test the balance between fostering innovation and appropriate frameworks for public trust, namely digital governance laws and regulations.

- Both Waterfront Toronto and Sidewalk Toronto have been encouraged to be highly attentive to public consultation, transparency and outreach during the planning phase, including using established bodies to provide guidance, such as the Waterfront's Digital Advisory Panel that will help identify and frame policy issues that will arise under the planning for Quayside, as well as other experts.

KEY BACKGROUND

- On October 18, 2018 Sidewalk Labs outlined draft proposals for a Quayside digital governance framework at a meeting of Waterfront Toronto's arms-length Digital Strategy Advisory Panel (DSAP) (see full deck attached as **Annex C**). The proposals focused on the following key components:

    - **Responsible Data Use (RDU) Guidelines** – application of the guidelines to all parties in Quayside, not just SWL, to put personal privacy and the public good first while fostering innovation
    - **Civic Data Trust** – an independent entity to control, manage and make publicly accessible all data that could reasonably be considered a public asset….move away from entities, including SWL, solely owning and controlling these assets
    - **Responsible Data Impact Assessment (RDIA)** – all entities proposing to collect or use urban data, including SWL, will have to file an RDIA with the Trust that is publicly available and reviewable
    - **Open Standards** – SWL will base its technology on open standards….so anyone can plug in or compete

- The presentation was followed by a lengthy question/answer period where DSAP members sought clarity and challenged elements of the proposed Sidewalk approach. Highlights from this session are as follows:

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- The data trust proposal is generally viewed favourably although other possible solutions should continue to be explored;

- A data-related pilot should be launched in order to take a small aspect of the proposal out of the abstract and give the public a tangible sense of what this project will mean for them;

- Data collected at Quayside by Sidewalk should be housed in Canada contrary to Sidewalk's arguments against data localization (e.g., no legal requirement; more resilient infrastructure found elsewhere) which members found unconvincing; and

- More time is needed to develop a credible Master Innovation and Development Plan (a public consultation draft is currently slated for public release in early 2019).

PROPOSED TALKING POINTS/PROPOSED QUESTIONS

- As you may know, my department is responsible for federal matters relating to the Toronto Waterfront Revitalization Initiative, which includes Waterfront Toronto's partnership with Sidewalk Labs.

- The Quayside project under development by Waterfront and Sidewalk is exciting and ambitious in its aim to promote innovation and advanced urban planning, and produce better outcomes for the community.

- This partnership between a government-mandated agency and Sidewalk is a good example of the public and private sectors coming together to develop a vision that will include important infrastructure elements.

- Quayside will pilot a number of approaches that, if validated, could be applied at scale. What remains to be determined is how the infrastructure proposed for Quayside and perhaps beyond will be financed, should it be realized.

- My department encourages public-private collaboration in finding innovative funding solutions that can deliver new forms of infrastructure.

- Innovative financing lends itself well where we're starting to see more non-traditional investors in the infrastructure space, such as technology firms.

- It is important, however, that the public understand this business model and how the benefits that accrue to private partners are balanced with the public interest.

- Thus the key to a successful outcome will be public support during both the planning phase and eventually when a Master Innovation and Development Plan comes forward for consideration.

- Sidewalk Toronto, working with Waterfront, should continue to engage with citizens and leverage expertise as needed on all aspects of the Quayside proposal, given the cutting edge technology and smart infrastructure potential, but also given concerns over the role technology plays in the lives of citizens now and in the future.

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- As the full plan comes together Waterfront Toronto, as an independent agency, will ultimately need to come forward to its government stakeholders on the plan for Quayside, and frankly the wider waterfront vision.

Questions

- Can you share with us your vision for Smart Cities and your long-term vision for Sidewalk Labs in Canada?

- The Quayside Master Innovation and Development Plan is going to address urban challenges in a number of different areas. These will implicate the mandates of different departments and ministries across the three orders of government. Have you thought about which areas you'll want to engage the federal government on as you complete the Plan?

- What are the key challenges and impediments you see in developing the plan and creating sufficient public and government support to make it a reality?

- You had previously said that you were surprised by how issues around data and privacy were playing out in Canada as opposed to the U.S. What lessons has Sidewalk drawn on these matters since partnering with Waterfront Toronto, and how has it changed its approach?

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Mr. Dan Doctoroff
Chief Executive Officer, Sidewalk Labs



Dan Doctoroff is Chairman and Chief Executive Officer of Sidewalk Labs. Prior to joining Sidewalk Labs, Dan was President and Chief Executive Officer of Bloomberg L.P., the leading provider of news and information to the global financial community. During the seven years that he led the company, despite the 2008 financial crisis, Bloomberg's organic revenues nearly doubled.

Prior to joining Bloomberg L.P., Dan served as Deputy Mayor for Economic Development and Rebuilding for the City of New York. With Mayor Michael R. Bloomberg, Dan led the city's dramatic economic resurgence, spearheading the effort to reverse New York's fiscal crisis after 9/11 through a five-borough economic development strategy. This plan included the most ambitious land-use transformation in the city's modern history; the rebuilding of the World Trade Center site; the largest affordable housing program ever launched by an American city; and the formation of new Central Business Districts and Industrial Business Zones. Dan also oversaw the creation of PlaNYC, New York's path-breaking sustainability plan.

Before joining the Bloomberg administration, Dan was Managing Partner of the private equity investment firm Oak Hill Capital Partners. While at Oak Hill, Dan founded NYC2012, the organization that spearheaded efforts to bring the Olympic Games to the city.

Dan serves on the Boards of the University of Chicago, World Resources Institute, United States Olympic Committee, Bloomberg Philanthropies and Human Rights First. He is the founder of Target ALS, which raises funds for and has established a new model of collaboration to advance ALS research. He is a founder and chairman of Culture Shed, an innovative new cultural institution at the Hudson Yards in Manhattan.

Dan is a graduate of Harvard College and The Law School at the University of Chicago.

A native of Michigan, Dan has lived in New York for the past 32 years with his wife, Alisa. The Doctoroffs have three grown children.

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BACKGROUND

- Waterfront Toronto is an independent agency created in 2001 under provincial statute by Canada, Ontario and the City of Toronto to manage the Toronto Waterfront Revitalization Initiative. SWL was created by Google's parent company Alphabet in 2015 to design, test, and build urban innovations.

- In a November 2017 announcement attended by the Prime Minister, Waterfront Toronto selected SWL as a funding and innovation partner to develop Quayside, a small geographic area on the waterfront, following a public and global RFP process.

- Under an agreement between Waterfront Toronto and Sidewalk, the company has committed $50 million towards fully developing a long-term development plan for Quayside. No lands or other rights have been committed to Sidewalk and the terms of the Project Development Agreement (PDA) allow for a process to work on a plan for development.

- Sidewalk will also consider moving Google Canada's headquarters to the waterfront area as an anchor for the urban innovation cluster, and has committed to promoting innovation in Toronto through establishment of a new institute. Waterfront will need to take any development plan before the three orders of government should there be need for specific approvals of initiatives under the plan.

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Sidewalk Labs

October 2018

Digital Governance Proposals for DSAP Consultation

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SIDEWALK LABS

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Sidewalk Labs started with a belief...

By integrating forward-thinking urban design and technological solutions we aim to address urban challenges experienced around the world and fundamentally improve quality of life in cities.

We began by speaking with experts from around the world in fields like mobility, affordable housing, construction, technology, policy, planning, and governance.

From those conversations we envisioned new experiences that could be possible in a new type of city.

Among the new experiences we imagined, we recognized a common theme — that many involved utilizing data in new ways.

We knew that technology could catalyze these solutions, and data would make them better. But we also knew that data for data's sake or tech for tech's sake would not improve quality of life.

From the outset we knew that the monetization of data would not be part of our business model. That is why we committed not to sell personal information or use it for advertising purposes.



The New York Times

TECHNOLOGY

Sidewalk Labs, a Start-Up Created by Google, Has Bold Aims to Improve City Living

A FEW SPECIFIC EXAMPLES

Streets that prioritize safety, pedestrians, and cyclists, because they are designed to anticipate shared, self-driving vehicles that wouldn't need much parking and could communicate with each other and with adaptive traffic lights. This would mean significant amounts of street space given back to pedestrians and cyclists, less congestion, and improved safety.

Buildings with a far more diverse and vibrant mix of uses as a result of "outcome-based code," which doesn't require uniformity of use but rather ensures structural integrity, air quality, and noise levels through conditions-sensing technology.

Significantly reduced carbon emissions achieved by technology that monitors and manages energy demand across the neighbourhood.

...and many more

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We conducted extensive consultations on responsible data use

Over the past year, as Sidewalk Labs prepares a "Master Innovation and Development Plan," we have had extensive consultations with experts, government, regulators, and residents in Toronto and across Canada.

We engaged Dr. Ann Cavoukian, the three-term Information and Privacy Commissioner of Ontario, who created the internationally adopted **Privacy by Design framework**, as an advisor to the project.

We meet regularly with privacy regulators to talk about our plans and seek guidance. Sidewalk Toronto is the first participant in the Office of the Privacy Commissioner of Canada's newly formed Business Advisory Directorate.

We convened a Data Governance Working Group of academics, former regulators, technologists including Canada's leading expert on de-identification, private sector leaders, and community representatives who have advised us on topics ranging from responsible data use in product development to governance and stewardship issues.

We talked to the private sector—early stage startups and large multinationals—about what they see as key opportunities and challenges.

We participated in the public consultations around Canada's National Data Strategy.

We carefully considered feedback from public roundtables, the Residents Reference Panel, and the Sidewalk Toronto Fellows report.

We studied examples from around the world of best practices, policy innovations, and lessons learned.

We welcomed thousands of people from Toronto and around the world to *307* to engage with our team in conversations about every issue we are looking at, including data.

We established a research grant program to explore a range of complex issues, including the intersection of privacy and the collection of non-personal information in the physical environment.





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We engaged privacy regulators on issues related to digital governance

Excerpt from the Office of the Privacy Commissioner of Canada
(Annual Report to Parliament, September 27, 2018).

We announced in May 2018 our first advisory project involving Sidewalk Toronto, a smart-city endeavor between Waterfront Toronto and Sidewalk Labs,

owned by Google's parent company Alphabet. The initiative involves building a technology-driven neighbourhood on the city's eastern waterfront that includes sensors aimed at helping city planners find efficiencies.

Understandably, it is raising many questions about data collection, privacy, where the information will be stored and how it might be used.

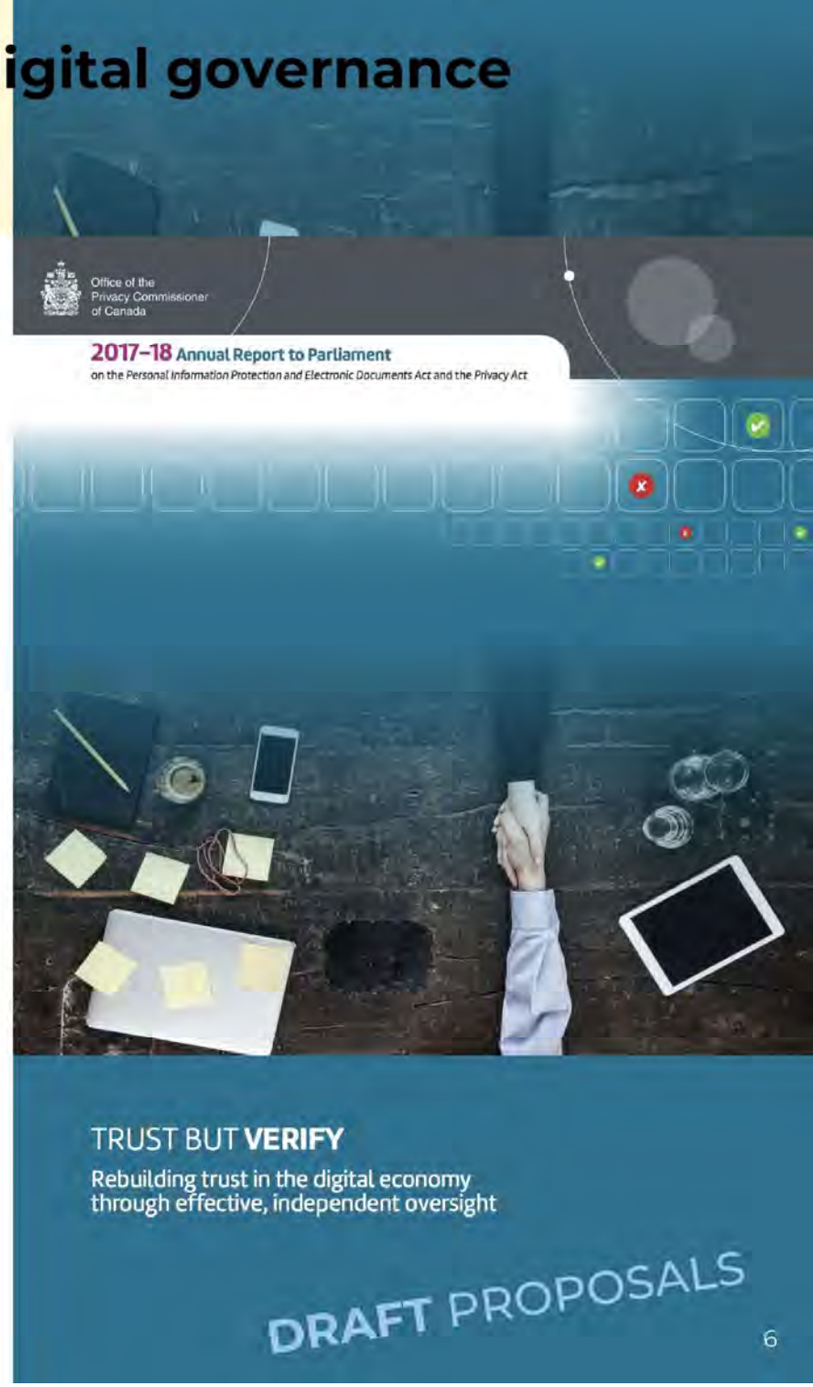
Along with colleagues from the Office of the Information and Privacy Commissioner of Ontario, members of our Business Advisory Directorate met with those behind the project to learn more about it and how they were addressing some of these privacy concerns.

We also reminded officials of key privacy principles, including identifying the purposes for collection, obtaining consent, ensuring individuals could access their own personal information and being accountable for protecting the data and being clear about who owns it.

Overall, we are encouraged by Sidewalk Toronto's efforts to proactively address privacy and data security in the design and implementation of the initiative.

Given the project is still in its early stages, we are continuing to monitor developments and proactively engage with Sidewalk Toronto officials as it progresses. We also hope the advice we provide will be helpful as other smart city initiatives pop up across the country.

Office of the Privacy Commissioner of Canada



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A range of concerns and questions surfaced with regard to data and the Quayside project

Confusion about Sidewalk Labs' plans related to data, exacerbated by the time it has taken to work through complicated issues

Concern that data monetization is a key part of Sidewalk Labs' business model

An array of questions:

- **Is Sidewalk Labs**, and this project, intended to be a data source for Google?
- **How will data—particularly data collected in the physical environment**, which some argue should be considered a public asset—be protected and governed?
- **Who will own and control the data** that originates in Quayside's physical environment?
- **How do we address the difficulty of obtaining consent** when collecting data in the physical environment?
- **What are the respective roles of Sidewalk Labs**, other private sector players, and governments when it comes to data and technology?
- **How do we ensure all innovators**, including Sidewalk Labs, will be on equal footing in Quayside?
- **How do we make sure the protections of Canadian law apply to all data** originating in Quayside?

AN ONGOING, COLLABORATIVE PROCESS

This presentation to the Waterfront Toronto Digital Strategy Advisory Panel includes ideas formed in response to what we've heard and learned.

We will use this opportunity and ongoing consultations to further develop these ideas into components of the **Master Innovation and Development Plan, a draft of which will be released in early 2019.**

In the coming months, we will return to the DSAP for discussion of several other topics: intellectual property; charter, governance structure and implementation of the Data Trust; data security, including technological approaches to protecting personal identity and information; and case studies on technologies planned to be implemented by Sidewalk Labs in Quayside. We will also continue conversations on the Responsible Data Use Guidelines and the Responsible Data Impact Assessment.

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Sidewalk Labs determined that Privacy by Design would be embedded into all of our projects, from the beginning

Privacy by Design is an essential component of fundamental privacy protection that served as Sidewalk's first building block as we formulated an approach to Responsible Data Use.

FOUNDATIONAL PRINCIPLES	SIDEWALK LABS' IMPLEMENTATION
Proactive not Reactive *Preventative not Remedial*	Sidewalk Labs is developing and will utilize cutting edge privacy-enhancing technologies including k-anonymity, edge computing, and other de-identification techniques.
Privacy Embedded into Design	Sidewalk Labs conducts Responsible Data Impact Assessments (RDIAs) to enable consistent and transparent decision making. Every project/product starts with a detailed, nuanced discussion of how it is going to interact with data and protect the rights of individuals.
Privacy as the Default Setting	Sidewalk Labs designs projects/products to add value *without* collecting personal information if possible. If personal information is required, Sidewalk destroys the data as close to the source as possible; or de-identifies data using world-class techniques.
Full Functionality *Positive-Sum, not Zero-Sum*	Sidewalk Labs not only embeds privacy into urban development projects, but seeks to develop technologies that benefit the project as well as enhance privacy for the individual.
End-to-End Security *Full Lifecycle Protection*	Sidewalk Labs engages the best and brightest tech and policy thinkers to inform our processes and practices. Sidewalk utilizes (and develops) state of the art technology and processes to protect personal information from loss, theft, and unauthorized access.
Visibility and Transparency *Keep it Open*	Sidewalk Labs proactively communicates the reason we are collecting data and the benefits to individuals when we ask for their personal information, in a clear and easy to understand manner.
Respect for User Privacy *Keep it User-Centric*	Sidewalk Labs is developing ways of providing services which allow user-centric data management and anonymous authorization for access control.

PRIVACY BY DESIGN

In October 2010, regulators at the International Conference of Data Protection Authorities and Privacy Commissioners unanimously passed a resolution recognizing Privacy by Design as an essential component of fundamental privacy protection.

Privacy by Design embeds privacy measures into the design of a project, asking questions such as: *"What is the minimum data you really need to accomplish the goal?" and "Do you need personal information, or can you accomplish it with de-identified data?"*

Since then, Privacy by Design has developed Into a global presence and has been translated into 40 languages.

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We established and continue to refine Responsible Data Use Guidelines that serve as a foundation for our work

These Responsible Data Use Guidelines guide our work on the development of policies that implement **Privacy by Design** and address data stewardship and access to data.

- **People first.** All projects must apply Canadian values of diversity, inclusion, and privacy as a fundamental human right.
- **Beneficial public purpose.** There must be a clear public purpose and value to the proposed use of Urban Data. A proposal cannot collect data for data's sake.
- **Transparency and clarity of usage.** Projects must always inform individuals of how and why their information is being collected and used, and do so in a way that is proactive, clear, and easy to understand. For Urban Data in public spaces, where meaningful consent cannot be reasonably or reliably achieved, clarity of usage can include efforts such as physical signs notifying people of a data device, or informational websites describing a service or program in greater detail.
- **Meaningful consent.** If a person opts into a service that uses individual identification, that person must have meaningful consent or control over how the information is used. Meaningful consent must go beyond current privacy policies, which are typically long and written in legalese, balancing the substance necessary for legal consent with a simplicity that people can understand.
- **De-identify by default.** Urban Data that includes personal information must be "de-identified" by default — designed not to trace back to any individual. For example, if a traffic counter collects an image of three cars that includes license plates, this data can be de-identified by processing a count of "three cars" and deleting the raw image containing the license plate information. Once de-identified, a data set is considered to no longer contain personal information, as the risk of re-identification is extremely low.
- **Open by default.** All de-identified Urban Data gathered in the public realm will be made open, free, and available in the public domain by default to encourage innovation and reflect the role of Urban Data as a collective good.
- **No ads by default.** By default, companies, organizations, or individuals will not sell Urban Data containing personal information to third parties or use it for advertising purpose.

NEED FOR A ROBUST FRAMEWORK

The pace at which the world is changing has underscored the need — and the opportunity — to create a new framework for responsible data use in Quayside:

- **People are more connected now** than ever before, and the proliferation of data raises real concerns about the impact on personal privacy.
- **Recent high-profile examples of data and privacy breaches** or misuse have further evidenced the potential impact of inadequate privacy protection.

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Sidewalk Labs' proposed approach to digital governance aims to serve as a model for cities around the world

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

Our approach to digital governance is based on the position that:

- **Independent governance** is necessary to protect personal and public interests across areas of data stewardship, privacy, access, and, security—in addition to government enforcement of Canadian and Ontario privacy laws and regulations
- **All parties**, including Sidewalk Labs, collecting and/or using data in the physical environment of Quayside will be held to the same high standards of digital governance
- **Information architecture and services** should be open, enabling and promoting innovation by the many, not the few

Based on these positions, we propose four key components of a framework for digital governance in Quayside:

- **Responsible Data Use (RDU) Guidelines**: Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation
- **Civic Data Trust**: An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Lab. With the Data Trust, we move away from entities, including Sidewalk Labs, solely owning and controlling these assets.
- **Responsible Data Impact Assessment (RDIA)**: Publicly auditable assessment for all public and private digital services required before data is collected and used
- **Open Standards**: Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation; the Data Trust might consider encouraging or requiring open standards, as well

KEY TAKEAWAYS

No one should own original information collected from Quayside's physical environment—including Sidewalk Labs. Instead, this "Urban Data" should be under the control of an **independent Civic Data Trust.**

To protect privacy, all entities proposing to collect or use Urban Data (including Sidewalk Labs) will have to file a **Responsible Data Impact Assessment** with the Trust that is publicly available and reviewable.

With regard to the use of data, **one set of rules will apply to everyone.** Sidewalk Labs will not receive any special treatment.

Sidewalk Labs will use open standards for any digital infrastructure and services it provides—so anyone can plug in or compete.

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Data Trusts are beginning to be used to govern data in urban contexts

SIDEWALK LABS

A Civic Data Trust is a model for stewardship and management of data and digital infrastructure that approves and controls the collection and use of data for the benefit of society and individuals.

A Civic Data Trust is particularly useful where data is being collected and used in an urban environment and there are challenges in obtaining meaningful consent.

It is an independent third party that ensures that value from data goes to the people, communities, government, industry, and society from which it was collected, and that data privacy and security are protected. **A Data Review Board**, assembled of diverse members of the community, would monitor and enforce data collection and use.

Other cities, countries, and organizations around the world, including Canada, Barcelona, Estonia, Guernsey Island, and the Copenhagen-Hitachi City Data Exchange, have implemented variations of data trusts.

GLOBAL EXAMPLES OF DATA TRUSTS

Data trusts come in different forms and structures, two of which are:

Barcelona Model: Trusted Intermediary and a Data Commons

Barcelona's CityOS is the city's internal data lake, which is managed by the city's Chief Data Officer. In this model, all of the data is pooled into one central repository, a "commons", and managed by a trusted intermediary. Some datasets are made publicly available under degrees of openness via APIs. Some data is available through Decidim, Barcelona's digital democracy portal, or BCNow, its data dashboard. 'Sentilo' is Barcelona's main sensor platform for environmental or ambient data. Barcelona's projects are funded by the EU Commission's DECODE.

CITYOS
CITY OPEN SOURCED

Estonia Model: API Framework Management

Estonia's X-Road data exchange platform is based on an approach where each collector of data stores its own data, which are standardized and accessed through APIs that are managed by the Trust. It is a repeatable framework of terms and conditions with APIs that allow developers and others to access data for testing, product development, and data analytics.

X-ROAD

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Proposal: A Civic Data Trust for Quayside

The stewardship, management, and responsibility for data that is collected and used needs to sit with an independent entity whose sole responsibility is to protect the public interest.

The Trust would be an independent body with the mandate of being a steward of data collected in the physical environment, which we call **Urban Data**.

- **Following Responsible Data Use Guidelines, the Trust would approve and control** the collection and use of, manage access to, and, potentially, store Urban Data originating in Quayside. This would be on top of—not in the place of—existing law, regulation, and government enforcement.
- **The Trust would, as a default, make de-identified Urban Data freely and publicly accessible—and not owned by any private entity**. The Trust would consider applications to collect Urban Data that involves personal information (e.g. CCTV cameras) or proposals to collect Urban Data on a proprietary or commercial basis.
- **In performing those functions, the Trust would be guided by a charter** focused on ensuring that Urban Data is collected and used in a way that is beneficial to the community, protects privacy, and spurs innovation and investment.
- **The governance of the Trust** would apply to all entities operating in Quayside.

BENEFITS OF THE CIVIC DATA TRUST

- **Protects** the public interest
- **Curtails** private ownership of data that might reasonably be considered a public asset
- **Ensures** compliance with data protection and privacy laws
- **Upholds** a set of values and processes for the beneficial use of data
- **Organizations** can share their data with other entities across different sectors for mutual benefit
- **Access** to different data sources allows us to understand public problems from many angles
- **Opportunities for new**, innovative, and data-driven solutions to public problems
- **Data collection** and use is made transparent
- **Institutions** can better monitor and evaluate the real-world impacts of policies

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Defining Urban Data

Data collected in the physical environment, particularly in public spaces, will be the domain of the Civic Data Trust.

Urban Data is data collected in a physical space in the city, which includes:

- Public spaces, such as streets, squares, plazas, parks, and open spaces
- Private spaces accessible to the public, such as building lobbies, courtyards, ground-floor markets, and retail stores
- Private spaces not controlled by those who occupy them (e.g. apartment tenants)

Urban Data is different from other data and requires a different approach because:

- It could reasonably be considered a public asset.
- Individual consent is hard to achieve in public or publicly accessible spaces, unlike when individuals provide data in more traditional contexts.
- Existing requirements attached to the collection of Urban Data only apply when it is identifiable, and are often not followed; there are no requirements attached to the collection of Urban Data that is not personal information.
- The community has the right to expect reasonable protection and proper use of data collected in these spaces.
- Such data raises potential community surveillance concerns.
- Urban Data is anchored to geography, unlike data collected through websites and mobile phones, and lends itself to local governance.

HOW OUR FOCUS ON URBAN DATA REFLECTS WHAT WE'VE HEARD

It acknowledges the consent challenge involved with Urban Data and puts in place a mechanism to obtain "community consent" by:

- **Placing** governance and oversight in the hands of an independent entity that represents the community interest
- **Requiring** Privacy by Design
- **Providing** transparency for the community
- **Enlarging** the types of data that deserves protection beyond personal information to data that has the potential to impact people
- **Focusing** on the entire ecosystem in Quayside, enabling responsible data use and across the board privacy protections

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Proposal: Civic Data Trust

The Civic Data Trust will follow a clear and consistent process that gives it oversight of Urban Data gathered in the public realm.

The Civic Data Trust will sit at the centre of a process established to ensure adherence to Responsible Data Use Guidelines

01
RDIA Filing

Before any collection and/or use of Urban Data can occur, a Responsible Data Impact Assessment (RDIA) must be conducted and filed with the Civic Data Trust, as part of an application to commence collection and/or use. *(See Section 3 for details)*

02
Approval

Many applications to the Civic Data Trust will be able to be self-certified, submitted, and advanced to the registration step. These will generally be applications for the collection of non-identifiable data that will be made freely and publicly available.

Other applications will require substantive review by the Civic Data Trust. These may involve the collection of Urban Data that is identifiable or collection of Urban Data on a more proprietary basis.

03
Registry

Civic Data Trust will approve placement of devices used to collect Urban Data and maintain an online registry of RDIAs and map of device locations, with easily accessible information on what data is being collected, why, how, where, and by whom.

04
Managing Access

By default, non-personal Urban Data will be open and freely accessible to the public.

In cases where Urban Data access is restricted, the Civic Data Trust will manage access to this data.

This could be accomplished in a variety of ways, from having the Trust actually hold the data as a repository to having it set rules that require collectors to publish data in real time.

05
Enforcement

The Civic Data Trust retains the duty to audit all uses and remove digital devices in the event it discovers a violation.

If the Civic Data Trust were to serve as a repository for data, it would have the ability to shut down access by bad actors.

The question of more traditional enforcement authority needs to be considered as part of ongoing consultation.

06
Exemptions

The Civic Data Trust will have the authority to exempt from registration specific uses that, in its judgment, do not have implications for personal privacy by virtue of their limited technical capabilities, such as water-pressure sensors on building pipes or weight sensors in freight elevators. (The Trust will have no power to grant exemptions from existing privacy law.)

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Data Typologies

Depending on issues of place, context, and control, different kinds of Urban Data merit different kinds of oversight.

	Governance Considerations	RDIA & Approval Process	Role of Data Trust
Urban Data Type 1 Collected in the public realm (e.g. pedestrian counters, street-facing cameras)	• Individuals have little control over collection of Urban Data in these spaces • This data could reasonably be considered a public asset and will therefore as a default be made freely and publicly available • Private control or collection of any data that is personally identifiable requires substantive review by Data Trust	• RDIA and applications to Data Trust are mandatory in all cases. • Applications to Data Trust can be self-certified if data is de-identified and freely and publicly available, and applicant does not seek proprietary control • Otherwise Data Trust substantively reviews applications • Existing requirements, including related to signage, in effect and subject to actual enforcement	• Receives applications and RDIAs • Reliably and speedily—potentially, automatically—approves accurate, self-certified applications • Substantively reviews applications that do not meet the requirements for self-certification • Registers placement and maintains a publicly available registry of devices and associated applications and RDIAs • Manages public availability and, where applicable, private access to various data streams
Urban Data Type 2 Collected in privately-owned but publicly accessible spaces Different classes within this type depending on the kind of space (e.g. cameras in large building lobby vs. a small store)	• Individuals have little control over collection of Urban Data in these spaces • Depending on the class (see next column), arguments for data as a public asset may be stronger or weaker • In any circumstance, the public has an interest in a fulsome understanding of data collection mechanisms	• RDIA and applications to Data Trust are mandatory in all cases. • Class A (e.g. camera in a large building lobby): Applications to Data Trust go through same process as Urban Data Type 1 • Class B (e.g. small café camera): All applications to Data Trust can be self-certified • Existing requirements, including related to signage, in effect and subject to actual enforcement	• Class A: Same as Urban Data Type 1. • Class B: ◦ Reliably and speedily—potentially, automatically—approves accurate, self-certified applications ◦ Registers placement and maintains a publicly available registry of devices and associated applications and RDIAs ◦ No substantive review ◦ No access management; data not made publicly available by default
Urban Data Type 3 Collected in fully private spaces, generally homes or offices (e.g. thermostats, home security cameras, sensors for building code compliance)	• Data cannot reasonably be considered a public asset • May be necessary to achieve community goals (e.g. temperature monitoring for energy demand management) • May have particular privacy implications because devices are in private spaces, and devices in tenant spaces raise consent issues	• Devices installed by residents in their private spaces would be entirely exempt from this regime • RDIA and applications to Data Trust are mandatory in all cases of devices installed by a landlord or builder • Parties can self-certify if they abide by Responsible Data Use Guidelines, provide full disclosure, and allow opt-out • Otherwise, Data Trust substantively reviews applications	• Reliably and speedily—potentially, automatically—approves accurate, self-certified applications • Substantively reviews applications that do not meet the requirements for self-certification • Registers placement and maintains a registry of devices and associated applications and RDIAs ◦ Open question regarding whether this registry should be made publicly available. • Audits de-identification and storage.
Traditionally Collected Data Involving Direct Consent (e.g. apps and websites)	• Issue that extends beyond Quayside • Harder to see this data as a public asset • Local, geographically-bound governance regime unworkable given the lack of a relationship between this kind of data collection and geography • Sidewalk Labs will hold itself and its partners to high standards given the role it will play in this community	• RDIA is not required for third parties • Sidewalk Labs commits to filing RDIAs with the Data Trust so that they are publicly transparent	• Data Trust not involved, other than to receive and publish Sidewalk Labs RDIAs, as well as any voluntarily filed RDIAs, and to manage any voluntarily contributed data

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All collection and use of Urban Data will require a Responsible Data Impact Assessment

All entities seeking to collect and/or use Urban Data in Quayside will submit Responsible Data Impact Assessments (RDIAs) as part of applications to the Civic Data Trust. The RDIA process will be a core tool for ensuring adherence to the community's Responsible Data Use Guidelines.

The RDIA is an assessment of the prospective use of data involved in an activity, including an analysis of whether the benefits of the activity outweighs the risks involved. It is a vehicle for assessing alignment with principles, legal requirements, and stakeholder expectations.

Responsible Data Impact Assessments are conducted at the design phase, prior to data collection or use.

The RDIA enables parties to make decisions in a consistent, transparent way—and to do so reasonably quickly.

Outcomes

- ✓ Qualitative + Quantitative evaluation
- ✓ Appropriate stakeholders are involved throughout the project
- ✓ Demonstrable accountability
- ✓ Transparent and proactive
- ✓ Ensures Privacy by Design from the design phase, not an afterthought
- ✓ Enables de-identification by default



RESPONSIBLE DATA IMPACT ASSESSMENT

1. **PURPOSE** of the project/product/service, who is involved and who is accountable
2. **DATA**: a full understanding of the data, sources, data use and parties involved
3. **IMPACT** on parties and, in particular, individuals
4. **ANALYZE** risks and benefits

PRIVACY IMPACT ASSESSMENT
(IF APPLICABLE): If the project/product/service involves the collection or use of Personal Information, a Privacy Impact Assessment is also required.

DECISION: Whether an appropriate balance of benefits and mitigated risks supports the data processing activity

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Responsible Data Impact Assessment Section 1: Purpose

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Project Name/Description

Project Objective

What is the ultimate goal of this project?

If a pilot or partnership, what does it seek to demonstrate or achieve?

Does the activity fit within a larger theme of work that is currently being contemplated or undertaken?

Stakeholders

Who is collecting/using the data, and are the other stakeholders involved?

e.g. partners, vendors, customers, government, etc.

Note: This slide has been updated for clarity from the 10/15 version.

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Responsible Data Impact Assessment Section 2: Data

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Nature of Data

What specific types of data will be collected, tracked, transferred, used, stored or processed?

If project is at the concept stage, what data do you anticipate collecting or using?

Is the data about people, and if so, is it identifiable to a person or is it de-identified?
If Personal Information is collected, a Privacy Impact Assessment is also required

Is the data or anticipated use of the data sensitive?
Sensitive categories of data and/or use include information that is used to analyze or make decisions based on race, ethnic origin, religion or philosophical belief, gender, sexual orientation, physical or mental health, information or data that could be used to facilitate identity theft. A sensitive use of data may also be where there is a reasonable expectation the use of the data would be embarrassing or be considered sensitive to the individual whose data it is.

Sources of Data

Will data be provided by third parties?

Will data be collected by sensors? What type, and where are the sensors located?

Note: This slide has been updated for clarity from the 10/15 version.

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Responsible Data Impact Assessment Section 3: Impacts

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Impact to Individuals and Groups

Identify all the parties impacted by this data activity, and the impacts it will have.

What are the stated and unstated expectations of individuals, groups of individuals, and society for each use of the data?

Benefits

What are the benefits to the individual or groups of individuals?

What are the benefits to society?

What are the benefits to other stakeholders?

Risks (Inherent)

Considering all the factors relating to the data, the likely data use, the identifiability and sensitivity of the data, what are the risks to the individual, groups of individuals, society?

Is it foreseeable that data use might seem surprising, inappropriate or discriminatory or might be considered offensive causing distress or humiliation?

Could the data be used in a way that may result in a group of individuals being treated differently from other groups of individuals?

Is the accuracy and/or quality of the data appropriate for the data activity? Does the relative accuracy of the data have an impact on individuals/groups?

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Responsible Data Impact Assessment Section 4: Analysis

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Mitigating Risks

What are the technical and procedural safeguards (mitigating controls) that are being implemented to prevent and mitigate risks described above should they occur (e.g. encryption and delinking of data or increased transparency)?

How have Privacy by Design control standards been applied?

Are you using analytical driven models, insights or algorithmic decision making, that could impact individuals?

Is there a less data intensive way to achieve the goals of the data activity (including potential insights)?

Decision Analysis

Is there a net benefit?

Are there any other factors that should be considered?

Does the data activity comply with all laws, cross-border, policy, contractual, industry or other obligations organizational policies and self-regulatory commitments?

Does the purpose of the activity fit within the values of society?

Have all the stakeholder concerns identified in the Governance of Data section been appropriately addressed?

Is their appropriate Notice, Consent and Control as part of the data collection and use?

After considering all the above factors, is the activity a "go", "no go", or should some aspect of the activity be recalibrated to reduce the residual risk?

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Hypothetical Case Study 01: Traffic Management System

Traffic management system in Quayside by Sidewalk Labs

Future hypothetical: Sidewalk Labs is working to implement a plan approved as part of the Master Innovation and Development Plan for a traffic management system in Quayside, which involves pedestrian counters and adaptive traffic lights.

APPLICATION 1

Pedestrian Counters

Sidewalk Labs submits an application and RDIA for pedestrian counters to the Data Trust. Because the data is non-identifiable and will be made freely and publicly available, it can be self-certified.

- **The Data Trust publishes the RDIA** and adds the locations where the pedestrian counters will be installed to its public registry.
- **The pedestrian counters are installed,** and the data from the counters is made freely and publicly available, and not owned by Sidewalk Labs.
- **Pedestrian count data is used** as part of the traffic management system.
- **The data is also accessed by a community group** to make the case for the need for a street redesign.

APPLICATION 2

Adaptive Traffic Lights

Sidewalk Labs submits an application and RDIA to deploy devices developed by a partner that use computer vision to compute de-identified paths and speeds of cars, cyclists, and pedestrians.

- **Depending on the policies of the Data Trust**, this application may:
  (1) be allowed to self-certify because the data is de-identified in real time; or
  (2) be subject to substantive review and, if real-time de-identification is confirmed, approved.
- **The Data Trust publishes the RDIA** and adds the locations where the adaptive traffic lights will be installed to its public registry.
- **The adaptive traffic lights are installed**, and the de-identified data feeds are made freely and publicly available, not owned by Sidewalk Labs.
- **That data is used** as part of the traffic management system.
- **The data is also accessed by another company** that believes it can process this data more effectively and produce better results.

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Hypothetical Case Study 02: Parks Improvement Study

Parks improvement study by a new third-party startup

Future hypothetical: Startup A is working on a project to make recommendations about improving environmental conditions and usage patterns at several parks throughout the City, including one in Quayside. This hypothetical scenario involves both air quality sensors and video cameras in the park.

APPLICATION 1

Air Quality Sensors

Startup A submits an application and RDIA for air quality sensors to the Data Trust. Though the data is non-identifiable, Startup A will incur a substantial financial burden in installing the sensors and seeks to recoup its investment by selling the data to companies trying to reduce their negative environmental impacts. Startup A asserts that it will not move forward with this project if the data is made freely and publicly available from the start.

- **This application may not be self-certified** because Startup A seeks to maintain proprietary control of the data.
- **The Data Trust reviews the application, judges it to provide a net benefit to the public, and approves on the condition** that proceeds from the sale of the data will be shared between Startup A, the City, and the Data Trust.
- **The Data Trust publishes the RDIA** and adds the locations where the air quality sensors will be installed to its public registry.
- **The air quality sensors are easily installed** using open standards-based mounts, and access to the data is limited to Startup A.
- **After a time, the data is made freely and publicly available.** It is then accessed by a weather app providing air quality alerts that decides to start funding the ongoing operations and maintenance of the technology.

APPLICATION 2

Video Cameras

Startup A submits an application and RDIA for video cameras to capture usage patterns at the park in Quayside.

- **This application may not be self-certified** because it involves the collection of personal information.
- **The Data Trust reviews the application and approves on the condition** that the video footage will be used only for the purposes of the park improvement project, and will be destroyed on a rolling basis after seven days. Startup A must also, in accordance with existing requirements, prominently post signage around the cameras.
- **The Data Trust publishes the RDIA** and adds the locations of the cameras to its public registry.
- **The cameras are easily installed using open standards-based mounts**, and the footage is reviewed and then destroyed on a rolling basis, meeting the seven-day requirement.

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Quality of life comes first—no tech for tech's sake

This neighbourhood is not about technology for technology's sake.
We are focused on technological and urban design solutions to real problems.

RECAP

From the start of this project, we imagined a set of new experiences that could be possible in a new type of city.

Streets that prioritized safety, pedestrians, and cyclists, because they are designed to anticipate shared, self-driving vehicles that wouldn't need much parking and could communicate with each other and with traffic lights. This would mean significant amounts of street space given back to pedestrians and cyclists, less congestion, and far fewer accidents.

Buildings with a far more diverse and vibrant mix of uses as a result of "outcome-based code," which doesn't require uniformity of use but rather ensures structural integrity, air quality, and noise levels through conditions-sensing technology.

Significantly reduced carbon emissions achieved by technology that monitors and manages energy demand across the neighbourhood.

We have identified a set of innovations that could help improve urban life in Quayside. A non-exhaustive list:

Mobility	Traffic management technology and adaptive traffic lights to reduce congestion and increase safety.
Public Realm	Structural innovations to create active weather mitigation tools that can be deployed based on real-time hyperlocal measurements of rain and wind.
Sustainability	Energy demand management technology, thermal heating and cooling, and other innovations to push toward climate positivity.
Community	Engagement tools to provide informed input into neighbourhood decision making.
Buildings	Construction innovation to enable a mix of affordability levels and real-time monitoring of building conditions to enable a mix of uses.
Access + Equity	Truly ubiquitous connectivity and focused efforts to improve digital literacy to bridge the digital divide.
Accessibility	Tools to make the community more accessible, such as spoken information about the physical environment and sensors to detect snow in curb cuts.

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Sidewalk Labs will build solutions—but not exclusively

We have identified solutions we believe will help make this a great place for people to live, and we are committed to bringing those to life. But we will also encourage others to create better solutions—because we will never have all the best ideas.

AN EXAMPLE: ENERGY USE

One key approach to creating a climate-positive neighbourhood is to measure how energy is used and optimize it using machine learning. Sidewalk Labs will work with partners to develop technology to measure aggregated and de-identified energy use by systems including heating and cooling, apply algorithms to propose optimizations, and build control systems to implement those optimizations. Aggregated and de-identified energy use measurements would be considered Urban Data and will be made freely and publicly available by the Civic Data Trust in order to stimulate research and development of even better techniques by others.

To accomplish this, Sidewalk Labs will:

- Identify and deploy **devices from the market that measure energy use and environmental conditions**
- With local partners, develop and deploy a **ubiquitous network** to allow those measurements to be communicated in real time
- Design **standardized mounts** for light poles and buildings to reduce the cost of deploying network access points and devices
- Build a **digital map** of the neighbourhood—with an unprecedented level of accuracy
- Create an **open data hub** that will provide real-time access to data in standard formats through well-documented interfaces in order to make measurement data that goes to the Data Trust easily accessible

This will not be done to the exclusion of others. To the contrary, this place will be more successful when alternatives are encouraged:

- When better devices are developed, it should be **easy to replace Sidewalk Labs-developed technology**
- We expect and encourage **many network providers** to provide service in this neighbourhood
- Better approaches to deploying network access points and devices will be able to supplant ours
- The digital map will be created by broad collaboration and be made freely and publicly available to all by a Civic Data Trust
- There will likely be several data hubs, making it easy to understand and work with publicly available data

The same open approach will apply to solutions for **mobility**, **public realm**, **community**, **buildings**, **accessibility**, etc.

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Enabling innovation by a wide range of players

Designing technology to support our quality of life goals has revealed patterns: common pieces of infrastructure and specific services that are required to bootstrap digital innovation in the neighbourhood for Sidewalk Labs and others.

WHAT SIDEWALK LABS WILL BUILD

Taking the same approach to designing solutions for **sustainability**, **flexible public realm**, **community**, **buildings**, **accessibility**, etc. leads us to believe that we should create a new standard for digital infrastructure and services in cities, including:

- Ubiquitous connectivity
- Standardized mounts and power
- A high-resolution 3D map of the neighbourhood
- An open data hub which will provide real-time access to data in standard formats through well-documented interfaces

The fact that Sidewalk Labs is committing to build these components does not preclude others from deploying technology that improves on, competes with, or replaces them.

WHAT OTHERS WILL BUILD

The lion's share of technologies that make Quayside unique will be developed and deployed by an ecosystem of many innovators:

- Just as in the World Wide Web, multiple providers can coexist, and technological solutions can integrate, as long as they agree on standards
- Others should be welcome to provide better, different, cheaper infrastructure and services
- We hope that this will enable a wide range of Canadian startups to innovate more quickly, and use Quayside as a springboard to success
- All systems collecting or using Urban Data —whether created by Sidewalk or third parties—will be subject to Civic Data Trust governance

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Open architecture makes this possible

Sidewalk Labs will not create a centralized, monolithic platform. Rather, we will work with partners to create an open architecture—one that enables and encourages collaboration and experimentation.

In order for anyone to innovate, and have the opportunity to replace components that Sidewalk Labs and others build, there must be no proprietary lock-in. This requires:

- **Well-documented, standardized formats and interfaces**
  - Any party will have the information required to build a replacement component for any urban system, or to create an entirely new application.
- **Easy access to public-domain data**
  - Standards are worthless if it's not possible to get access to data. For example, devising a new optimization algorithm for traffic requires training and test data, so traffic volume data should be made broadly available.
- **Data portability**
  - An existing system will likely have access to historical data provided to it by neighbourhood systems. This data should be able to be exported from the existing system so that new systems are not at a disadvantage for training and bootstrapping.
  - This is similar to email systems that allow the user to export all of their historical email messages so that they can move to a new provider, eliminating lock-in.

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Urban Digital Architecture Sketch

Each function within the urban technology stack will be served by Sidewalk Labs and also by others. Interchangeability requires standardized interfaces and formats.



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Example of an Open System: The World Wide Web

If urban technology used open standards in the same way that the World Wide Web does, innovation would explode, and the risk of vendor lock-in would be dramatically reduced.

You can use any browser...







to visit any web page...






served by any web server.









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Example: World Wide Web Standards

Standards enable innovation and competition.

Formatting
Hypertext Markup Language (HTML),
Cascading Style Sheets (CSS)

Images
Portable Network Graphics (PNG),
Joint Photographic Experts Group (JPG)

Interactivity
JavaScript

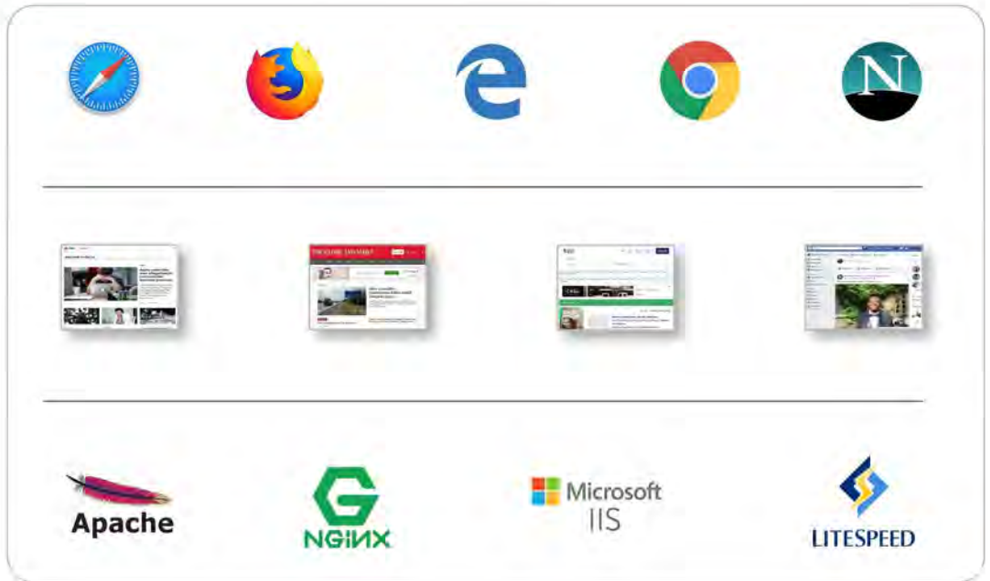
Communication
HyperText Transfer Protocol (HTTP)

Security
Secure Sockets Layer (SSL)

Anyone can build a web browser as long as it implements standards like HTML, CSS, JavaScript, HTML and SSL. The most popular browsers are free, and their cores are open source.

Likewise, anyone can build a web server as long as they implement HTTP, SSL, etc. The most popular servers are free and open source.

With partners, we hope to significantly advance a competitive, innovative urban technology ecosystem by using, developing, and promulgating standards.



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08 Questions for Discussion

DRAFT PROPOSALS

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Ensuring the protection of data in accordance with Canadian Law does not require data localization

Canada and other places with leading data protection regimes have recognized the ineffectiveness of one-size-fits-all and/or technology-specific requirements, and the importance of context—that the best way to achieve data protection in any given context depends on the types of data, entities, and jurisdictions involved.

With specific exceptions, data localization is not presently a requirement of Canadian or Ontario law. In addition, data localization:

- Is not necessary to ensure that data that originates in Canada is handled in accordance with Canadian law with regard to privacy protections, which can be achieved through contractual and technical mechanisms
- Presents technical and operational obstacles, including access to redundant storage locations to ensure security and availability
- Increases costs, which may raise barriers to entry for less mature companies
- Runs counter to the way information travels across the internet, without regard to geographic boundaries

For these reasons, Sidewalk Labs does not believe that it is sensible to impose a data localization requirement for innovators in Quayside.

Sidewalk agrees with the position of the Business Council of Canada, as expressed in its September 2018 Report on the Data Economy

> *Individuals and businesses should be free to transfer data across provincial and international borders, provided appropriate safeguards are in place.*

> *There should be a general presumption against local data storage and processing requirements. Governments may need to exercise sovereignty over data flows in rare cases when it is necessary to protect the public interest.*

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01 Introduction
02 Civic Data Trust and Urban Data
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In summary: our proposed approach

Robust governance, an open system, and protection of data.

Establishment of a Data Trust: Sidewalk proposes the establishment of an independent Civic Data Trust, which would approve and control the collection of, manage access to, and potentially store data collected in the physical environment, known as "Urban Data."

Data Trust to Make Urban Data Freely and Publicly Available: As a default, the Data Trust would make de-identified Urban Data freely and publicly accessible, eliminating the concept of data ownership. Specific approval by the Data Trust would be required for entities to collect Urban Data with personally identifying information (such as CCTV cameras) or Urban Data collected on a more proprietary basis.

Responsible Data Impact Assessments: Responsible Data Impact Assessments (RDIAs) would be used to ensure Privacy By Design and adherence to Responsible Data Use Guidelines in every part of the project and all collection of Urban Data, whether by Sidewalk or other parties. RDIAs would be filed with the Data Trust before the collection and/or use of any Urban Data within the project geography by any entity.

RDIAs and Registry of Devices Maintained by the Data Trust: RDIAs, along with a registry of devices collecting Urban Data, would be maintained and made publicly available by the Data Trust.

An Ecosystem of Technologies by Many Innovators: Sidewalk anticipates providing specific pieces of critical digital infrastructure and specific, use-case-driven technologies to achieve quality-of-life goals. All technologies provided by Sidewalk will be based on open standards, making it easy for the lion's share of technology in the neighbourhood to be provided by others.

Data Always Handled in Accordance with Canadian Law: To ensure that Canadian law and values are applied to data, Sidewalk Labs will use a toolbox of mechanisms, including contractual protections, technical protections, and edge computing, where data is processed on-device and not transferred to a central server. Sidewalk does not propose a data localization requirement specific to Quayside.

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Reviewing what we heard

How our thinking addresses key questions.

SIDEWALK LABS

Confusion about Sidewalk Labs' plans related to data, exacerbated by the time it's taken to work through complicated issues

We hope that these proposals have provided some clarity on how we are approaching a range of critical issues—all subject to your feedback and ongoing consultation.

Concern that data monetization is a key part of Sidewalk Labs' business model

It is not, and the governance of the Civic Data Trust is intended to ensure that no private entity can gain unfettered access to and ownership of data collected in Quayside.

Is Sidewalk Labs, and this project, intended to be a data source for Google?	No (see p. 4)
How will data—particularly data collected in the physical environment, which some argue should be considered a public asset—be protected and governed?	By an Independent Civic Data Trust, using Responsible Data Impact Assessments to promote the beneficial use of data and transparency (see p. 13)
Who will own and control the data that originates in Quayside's physical environment?	The concept of ownership will not apply to Urban Data in most cases, with the Data Trust making de-identified data freely and publicly available as a default matter and/or controlling access. Data will be under the control of another entity only in select cases, which will be determined once an RDIA has been submitted and the Trust has examined the public benefits involved. (see p. 13)
How do we address the difficulty of obtaining consent when collecting data in the physical environment?	By implementing a robust form of community consent represented by the Civic Data Trust (see p. 14)
What are the respective roles of Sidewalk Labs, other private sector players, and governments, when it comes to data and technology?	• Sidewalk provides some critical infrastructure and core services (see pp. 27-29) • Other players provide the lion's share of technology (see pp. 29-33) • Governments enforce privacy laws (see pp. 10, 13) • Data governance provided independently by the Data Trust, which may involve government in its establishment or ongoing work (see p. 13)
How do we ensure all innovators, including Sidewalk Labs, will be on equal footing in Quayside?	Through open standards; a limited, catalyzing role for Sidewalk Labs; and a governance model that applies equally to all players (see p. 30)
How do we make sure the protections of Canadian law apply to all data originating in Quayside?	We can ensure that data will always be handled in accordance with the laws of Canada without a data localization requirement (see p. 35)

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Some of our open questions

In addition to seeking general feedback on this presentation
from the DSAP, a number of specific questions are on our minds.

1. **What needs to be added** to the Responsible Data Use Guidelines to avoid vendor lock-in?
   Are there other additions or edits to consider for the Guidelines?

2. **How should a Civic Data Trust** with the broad authority we propose be established? Can it be established by contract?
   Can it be achieved through standards imposed by Waterfront Toronto? Or does it require legislation?

3. **What should the structure**, staffing, and, if pertinent, board composition of the Civic Data Trust look like?

4. **Should the Civic Data Trust** act as a repository for data? Is this necessary,
   and what are the upsides and challenges attendant to that responsibility?

5. **What will be involved** in getting the Civic Data Trust up and running, and how will this be funded? How will ongoing operations of the Civic Data Trust be funded? Should the Civic Data Trust have the authority to charge for access to certain kinds of data? How would that relate to the goal of making data freely and publicly accessible?

6. **Should the Trust** carry liability related to the improper collection or use of data under its jurisdiction?

7. **Are the typologies of Urban Data** well-crafted and have we drawn the lines between self-certification and substantive review in the right places?

8. **What are the mechanisms** and who will be responsible for enforcement?

9. **How can we best encourage** use of open standards?

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SCENARIO NOTE TO THE DEPUTY MINISTER

MEETING BETWEEN DEPUTY MINISTER OF INFRASTRUCTURE AND COMMUNITIES AND MICAH LASHER, HEAD, POLICY AND COMMUNICATIONS, SIDEWALK LABS

MEETING DETAILS

- **DATE/TIME**: Friday, January 25, 2018, (time TBC)
- **LOCATION**: Deputy Minister's Boardroom
- **PARTICIPANTS**:
  - Kelly Gillis, Deputy Minister, Infrastructure and Communities
  - Glenn Campbell, ADM, Investment, Partnerships and Innovation Branch
  - Micah Lasher, Head of Policy and Communications, Sidewalk Labs
  - Kristina Verner, VP, Innovation, Sustainability and Prosperity, Waterfront Toronto
  - Edward (Ed) Chalupka, Director, Government Relations, Waterfront Toronto

Mr. Lasher's biography is found under **Annex 1**.

PURPOSE

- Mr. Lasher reached out to provide an update on the Quayside project, and will be joined by Waterfront Toronto to cover expected progress toward completing a draft of the Master Innovation and Development Plan (MIDP) in 2019.

HIGHLIGHTS/KEY CONSIDERATIONS

- In December 2018 Waterfront and Sidewalk held a public roundtable that unveiled physical site plans for Quayside and held break-out sessions providing an overview of MIDP proposals being developed in relation to the data governance, mobility, sustainability, and affordable housing "pillars". A summary by INFC staff that attended, plus Qs&As and the plenary presentation from the event are attached under **Annexes 2-5**.

- The complete MIDP is expected to consist of 3 multi-chapter volumes comprising:
  1. development plans at different scales
  2. innovative technology solutions (the "pillar" areas)
  3. business terms and financial approach to implementation

- Since December Sidewalk has been engaged with Waterfront on preparing the plans and volume. Governments have yet to see any of the drafts and are allowing the process to unfold between Waterfront and its partner Sidewalk Labs. Waterfront is also work on an evaluation framework to assess the MIDP when completed draft is produced.

- A complete draft MIDP for governments' review is expected in spring 2019. Governments will review the MIDP at officials level and the nature of review is under discussion but will involve an internal process to first understand, then evaluate against existing policy

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frameworks. A Public consultation draft is expected to follow with Waterfront undertaking community engagement on it over summer 2019, with a 'final' draft for Waterfront Board consideration targeted for September 2019. Waterfront's Board must endorse the plan before it can be adopted and implemented as a plan.

- While governments will have an opportunity to review, as will the public, any implementation of the plan will be subject to normal City approvals as well as any provincial/federal regulations and policies as appropriate.

- The Governments will be focused on how the plan can be implemented, how policy issues or challenges can be addressed, as well as what and who will be ask to fund or support the various projects and development under the plan. These will all be subject to normal programs and policies around support, particularly for infrastructure.

KEY BACKGROUND

- Waterfront Toronto is an independent agency created in 2001 under provincial statutes by Canada, Ontario and the City of Toronto to manage the Toronto Waterfront Revitalization Initiative. SWL was created by Google's parent company Alphabet in 2015 to design, test, and build urban innovations.

- Sidewalk is working with Waterfront on a development plan that would see the eastern waterfront Quayside area become a new technology-enabled neighbourhood where digital solutions and forward-thinking urban design could be tested and applied to improve the quality of life for people in cities.

- Under an agreement between Waterfront and Sidewalk, the company has committed $50 million towards the creation of a long-term development plan for Quayside. No lands or other rights have been committed to Sidewalk and the terms of the foundational Plan Development Agreement (PDA) allow for a process to work on a plan for development.

- Sidewalk will also consider moving Google Canada's headquarters to the waterfront area as an anchor for the urban innovation cluster, and has committed to promoting innovation in Toronto through establishment of a new institute.

- While Sidewalk, working with Waterfront, has engaged with the public on early aspects of its development proposal, public concerns continue to be voiced primarily around privacy, data governance, procurement/intellectual property and the privatization of urban planning.

- As part of their response to public concerns, on October 18, 2018 Sidewalk outlined draft proposals for a Quayside digital governance framework at a meeting of Waterfront Toronto's arms-length Digital Strategy Advisory Panel (DSAP).

    - The proposals include development of responsible data use guidelines; the application of open data standards and requirement for a Responsible Data Use Impact Assessment; and, the creation of a Civic Data Trust, an independent entity to control, manage and make publicly accessible all data that could reasonably be considered a public asset.

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- Waterfront and Sidewalk continue to work with the DSAP, other data experts and members of the public to refine the data governance framework as draft chapters of the MIDP are being finalized. INFC is closely monitoring this activity.

- As it may pilot first-to-market technologies, the Quayside project is expected to generate much larger, at scale, proposals that will need to be weighed against current policies at federal, provincial and municipal level. More broadly it may test the balance between fostering innovation and appropriate frameworks for public trust, namely digital governance laws and regulations.

- Both Waterfront and Sidewalk have been encouraged to be highly attentive to public consultation, transparency and outreach during the planning phase and to establish appropriate bodies to provide guidance, such as the DSAP, to help identify and frame policy issues that will arise under the planning for Quayside.

- Beyond important digital and data issues there are other important community and urban planning aspects that have yet to be made public for consideration as well as the business models envisioned for Quayside, including e.g., real estate, and development and commercial planning.

- Importantly, Waterfront will need to take any development plan before its Board and the three orders of government and, where appropriate, seek approval of specific initiatives under the MIDP.

- Given its breadth of ambition, the Quayside development plan will implicate the mandates of different departments and ministries across the three orders of government. INFC continues to work as the portal into the federal government as specific policy issues and engagement opportunities around Quayside emerge.

PROPOSED TALKING POINTS/PROPOSED QUESTIONS

- I welcome the opportunity for Sidewalk Labs, along with Waterfont Toronto, to provide and update on where things currently stand with the MIDP process.

- As chair of Intergovernmental steering committee, it is welcome to be kept informed and to help coordinate the efforts and information sharing with the tri-governments.

- The Quayside project undertaken by Waterfront Toronto is a very exciting and ambitious initiative to promote innovation and advanced urban planning to produce better outcomes for communities.

- Public trust and community engagement on Quayside is key and due process is important to that outcome.

- Sidewalk labs is ultimately a partner in Waterfront Toronto's process, as set-out in the PDA, and this needs to be respected.

- It is important, then, for Sidewalk to work through Waterfront Toronto and its Board as development of the MIDP moves forward.

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- Waterfront Toronto will engage with governments, depending on what is needed and when.

- Waterfront Toronto will share the MIDP with governments but approval rests with Board, and then subsequent approvals will be sought from the different levels of government as may be appropriate.

- It is important that Waterfront Toronto and the government partners at officials-level get an opportunity to review the MIDP from point of view of understanding plan and providing objective views on clarity or ensuring any issues with the plan from a policy, legal, administrative lens are surfaced.

- Waterfront Toronto will also manage when material is shared with the DSAP as well as other advisory or review processes they see fit, and should decide when material is put in public domain as they are best positioned to manage public engagement.

- I look forward to your update.

Annexes:
1. Biography: Micah Lasher, Head, Policy and Communications, Sidewalk Labs
2. INFC Summary of December 8 Public Roundtable #4 (prepared by IPI)
3. Sidewalk Labs press release: Quayside site plan December 8, 2018
4. Waterfront Toronto draft Qs &As: Quayside site plan release December 8, 2018
5. Sidewalk Labs presentation: Quayside site plan December 8, 2018

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Mr. Micah Lasher
Head, Policy and Communications, Sidewalk Labs



Micah Lasher is Head of Policy & Communications for Sidewalk Labs, where he oversees public policy and communications, drawing on his experiences at the intersection of government and technology.

Before joining Sidewalk, Micah served as Chief of Staff in the Office of the Attorney General of the State of New York, where he helped run a staff of 1,800 people responsible for the state's legal affairs and for legal advocacy on behalf of residents. In this role, he worked extensively on formulating new regulatory approaches to emerging technology and on issues related to data privacy and security.

Previously, Micah was Director of State Legislative Affairs for the City of New York under Mayor Michael R. Bloomberg, where he was responsible for advancing New York City's comprehensive legislative agenda. Prior to his work at City Hall, Micah served as a top official in the New York City school system, an aide to Congressman Jerry Nadler, and a founding partner of KnickerbockerSKD, a strategic communications consultancy.

Micah serves on the boards of the Community Service Society, New York's leading anti-poverty organization, and the Riverside Park Conservancy, as well as on the Leadership Council of Tech:NYC. He earned a BA in sociology from New York University. A lifelong New Yorker who finally broke down and learned how to drive in December 2016, Micah lives in Manhattan with his wife and three children.

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Cariaga, Flordeliza (INFC)

Subject: FW: Notes from RT #4

From: Faraday-Smith, Nancy (INFC)
Sent: December 14, 2018 11:08 AM
To: Campbell, Glenn (INFC) <glenn.campbell@canada.ca>
Cc: Boudreau, Marcia (INFC) <marcia.boudreau@canada.ca>; Ladouceur3, Natalie (INFC) <natalie.ladouceur3@canada.ca>; Zewede, Heywet (INFC) <heywet.zewede@canada.ca>; Tippins, Shawn (INFC) <shawn.tippins@canada.ca>
Subject: FW: Notes from RT #4

Glenn –

See below our collective notes from Roundtable #4 held last Saturday. I've bolded the more pertinent items or interventions. I'll bring a hard copy of this to your office.

Nancy

On December 8, 2018, WT and SWL hosted the fourth public roundtable meeting on the Quayside project. The roundtable was a full-day meeting where participants had the opportunity to attend a morning and/or afternoon session (both with the same agenda) to learn about and discuss key details being considered for the draft Quayside MIDP. The program had four breakout sessions, each running twice in the morning and twice in the afternoon. The four break-out sessions were focused on:

- Quayside site plan and transportation
- Affordable housing and social infrastructure
- Digital governance
- Sustainability

OPENING PLENARY

WT Chief Development Officer Meg Davis presented on the assessment process for the MIDP, including the objectives and criteria against which the MIDP will be assessed (see attached). SWL Director of Public Realm, Jesse Shapins, then presented on the concept site plans for Quayside, which emphasized proposed design and technology innovations and that reiterated SWL's commitment to its proposed data governance framework.

Q&A sessions following the morning and afternoon plenary presentations saw the following questions asked from the audience:

A.M. Plenary Q&A session:

- What are the priority outcomes for social infrastructure against which the MIDP will be assessed? Meg Davis responded that that affordable housing targets, complete communities approach are "must haves" for the MIDP and are specified as RFP requirements.
- How will the project address water pollution in Lake Ontario? SWL's response suggested that the site plan proposed to increase residents' engagement with the lake which would increase awareness and sensitivity to environmental.
- How will Quayside connect to the planned Don River Valley Park (WT's response covered its plans for the Waterfront promenade, Silo Park and bridge connections from Quayside to Promontory Park.

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- [redacted] **asked WT how much of MIDP it has seen so far, and how many pages it is expected to be. Meg Davis responded that WT has seen have seen a few early draft chapters on some elements, and that the complete MIDP would be in the order of a few hundred pages or more.** [redacted] **also asked if WT would make the MIDP publicly available immediately upon receipt of a full draft, to which Meg clarified that WT would first review and provide feedback to SWL, as would governments, to assure the draft would be free of any clear-nonstarters and in suitable shape for public review**.
- A representative from organized labour (carpenters union) praised the site plan and tall timber aspect and asked about workforce development, including how to bring more people into the trade (given the already booming city) and reach out to the younger generation to make sure they have the skills needed for future?. SWL responded that it is working closely with the building trades on these questions.
- How will Quayside incorporate outdoor activities in the winter? SWL responded that year-round use of outdoor space remains a big priority, and that the intends to leverage technology innovations like building raincoats and proposed seasonal programming to make the outdoor space in the neighborhood accessible all-year long.
- [redacted] **asked if SWL is going to buy the land from Toronto? Meg Davis responded that WT owns most of the land, and that the PDA specifies that there are no plans to do land transfer. Other opportunities will be part of the business case that's under development. The Business Case(s) proposed by SWL will be subject to implementation analyses by both WT and Governments.**

P.M. Plenary Q&A session (repeated presentations from the morning)

- The proposed project contains many confusing acronyms. Will a glossary of terms be developed for the project? SWL responded yes this is being done.
- **What clarity can be provided on SWL's business model? SWL responded that this is still under development as part of MIDP but likely contain revenue models in the areas of infrastructure finance, limited real estate development, some IP shared with City for technology that may be piloted on Quayside.**
- What does privacy by design mean? SWL explained that that this is a concept that embeds privacy at the outset of any approach to new technology.
- What are the data ownership considerations around the project? SWL re-iterated that it doesn't plan on owning any of the data and that it intends to rely on government open data portals, etc. to the extent possible. SWL referenced its proposal around open data standards,
- who will own and fund the affordable housing? No transaction yet established, looking at economics of delivery, there are models to work through with the city including whether there affordable housing units would be directly city-wned, involve a city-pwned agency, a not-for-profit-entity of a private entity.
- Would the bridge for the Keating channel affect access by the marine industry? SWL responded that nothing proposed would affect marine uses permitted in the area.
- On affordable housing and school, what would be the trade-off on data collection, including collecting data involving children? SWL will abide by all legislation and policy related to data collection for all persons. There would be no greater demand for data from affordable housing residents.
- Has this model been shown to be a feasible business model? Want to make sure that technologies are replicable (scaleable)

A.M. MOBILITY BREAKOUT

- presentation by SWL emphasized putting people and public realm first
- WT referenced its desire to work with governments to accelerate delivery of LRT to Queens Quay/Quayside and area

Q&A

- **Participants asked for more detail on LRT plan, e.g. money? Value capture is a well-known principle to get transit built; looking for innovative financing schemes to make this happen**
- routing approaches...SWL working on mult-imodal trips but acceleration of LRT would bring huge benefit
- heated sidewalks (want to make sidewalks a vibrant place year round)
- autonomous vehicles (safety will come first)
- what lessons from Queens Quay

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A.M. SOCIAL INFRASTRUCTURE / AFFORDABLE HOUSING BREAKOUT

- WT Social Infrastructure presentation by Michael Wolfe, Innovation and Prosperity Manager. Presentation covered creating dynamic and diverse communities as per 2003 Central waterfront Secondary Plan; Requirements of 2015 City of T.O. Official Plan, 2016 TOcore req'ts; MIDP evaluation objectives for Inclusive Communities and Workforce Development Strategy.
- SWL Social Infrastructure Presentation by Alexis wise and Ariel Kennan – outlined physical spaces in site plan for arts & culture, civic life, health & well-being, elementary school and child care Looked at exploring pilot opportunities with the T.O. Public Library for programming and service delivery, and digital tools that can complement spaces and services on offer.
- WT Housing affordability presentation by Sumeet Ahluwalia, development Manager, covered affordable housing outcomes MIDP has to meet. SWL housing affordability presentation by Annie Greenbaum and Annie Koo covered SWL's various proposed affordable housing targets and mix (including 5% new shared equity affordable home-ownership option, and 5% shared amenity communal housing approaches, 40% 2+BR family housing units)

Q&A

- [redacted] **asked if SWL could comment on its efforts to lobby the Public Health Agency of Canada (SWL reps were unable to answer)**
- Concerns that surfaced from the table discussions included whether the Quayside site would have a homeless shelter, which SWL reps confirmed was not part of the proposal.
- Another table asked whether spaces and facilities would be dedicated to servicing the needs of newcomers/immigrants. Others asked if physical spaces on the site would be dedicated for different worship practices. SWL reps' responses were unspecific but took these questions under advisement. Still others asked if appropriate consideration had been given to the access needs of the disabled.
- Many questions were surfaced at tables around the various affordable housing targets contained in the proposal and the methodology used to determine / achieve them. People asked many questions about how rent structures may be determined, the role of property taxes, and of public and non-profit organizations like TOcore and the Toronto Community Housing Corporation.

A.M. / P.M. DIGITAL GOVERNANCE BREAKOUTS

- WT (Kristina Verner) provided overview of WT's implementation requirements, etc.
- SWL (Alyssa Harvey-Dawson, General Counsel) provided an overview of four digital governance framework components; and pointed to 3 use cases that tables could discuss: transportation, building efficiency, and public life. SWL lawyer and specialist in ethics of AI Chelsea Colbert was on hand to acts a facilitator. [redacted] were on hand to act as facilitators.

Q&A:

- [redacted] **noted that a smart city was never outlined as an RFP requirement, and asked whether it was prudent or in the public interest to have a public education conversation such as this on digital/data governance to simply comply with a vendor-driven timeline/deadline? Kristina responded that although SWL lineage is tech based, theirs is not solely a smart city proposal. Sher also affirmed that although the order of operations for discussions may not have been perfect in the past, discussions are now going in the right direction.**
- One table dealing with the public life discussion asked how data that would be collected and used at Quayside would compare to data being collected and used by the City in the rest of the City.
- Other tables mostly voiced the need to get over-arching principles and tenets on data governance right first before getting into specific implementation scenarios.

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For immediate release
November 29, 2018

SIDEWALK LABS REVEALS PRECEDENT SETTING PROPOSAL FOR A NEW NEIGHBOURHOOD AT QUAYSIDE

Includes 40% below-market housing and 9,000+ construction jobs

TORONTO — Sidewalk Labs revealed today a proposal for a new neighbourhood at Quayside that will improve the quality of life for Torontonians and set a new standard for urban living. The plan combines the latest in urban design and emerging technology to achieve unprecedented affordability and economic growth. Quayside will have 40% below-market housing, create 9,000 new jobs in construction and house 3,900 jobs upon completion.

"We know how important the revitalization of Quayside is for the city and everyone who lives here. Torontonians want more affordable housing, faster ways to get around the city, safer streets for pedestrians and cyclists, a cleaner and healthier environment. That's what we are aiming to do by creating this new neighbourhood," said Jesse Shapins, Director of Public Realm "This draft site plan released today demonstrates what we are envisioning for Quayside and how we aim to address these critical challenges facing Toronto."

Key features of the plan include:

- 40% below-market housing at Quayside, including 20% affordable housing and 20% middle-income housing.
- Upwards of 9,000+ direct and indirect jobs will be created in Ontario as a result of the building construction at Quayside.
- Approximately 3,900 jobs will be located at Quayside upon completion, with a mix of office, retail, production and community.
- All of the buildings at Quayside will be made of mass-timber. This will energize the Canadian timber industry placing the country in a world leading position in design, fabrication and construction. This will be the greatest concentration of mass timber buildings in the world.
- A 75-85% reduction in greenhouse gas emissions compared to today's standard developments.
- New ways to get around including the planned LRT, a safer Vision Zero neighbourhood, and flexible streets that prepares for an automated vehicle future.
- Extraordinary public and green spaces and waterfront access that will be accessible for everyone.
- A proposed, independent, Civic Data Trust for all "urban data". No one has a right to own information collected from Quayside including Sidewalk Labs.

The Site Plan released today will be presented to the public at the 4th Public Roundtable, taking place on Saturday, December 8th. Public feedback will be incorporated into a detailed Master Innovation and Development Plan to guide future work at Quayside, which is expected to be released in early 2019. It will be reviewed by Waterfront Toronto and all three

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levels of government and undergo public consultations led by both Waterfront Toronto and the City of Toronto.

Sidewalk Labs
Sidewalk Labs aims to combine world-class urban design with cutting-edge technology to set new standards of sustainability, affordability, and economic opportunity for people of all incomes abilities and ages.

Sidewalk Toronto
Waterfront Toronto has created the objectives and engaged Sidewalk Labs to design a new kind of complete community on Quayside that will serve as a model for sustainable and resilient neighborhoods throughout Toronto and cities around the world. Sidewalk Toronto also referred to as the Quayside project, has an ambition to address the toughest challenges facing cities — and meaningfully improve quality of life — through the combination of forward-thinking urban design and innovative technology.

– 30 –

For media inquiries:
press@sidewalklabs.com

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Substantive questions:

- **Does the plan meet Waterfront Toronto's objectives?**
  - It is important to note, that what we saw today was not the full Master Innovation Development Plan (MIDP), but an overview of some of what Sidewalk Labs has been working on for the plan. In time, Waterfront Toronto, our government partners, and third-party experts will do a comprehensive review of the MIDP to see how well it lives up to our ambitious goals and objectives for Quayside

- **How much public money will be needed to realign the streets?**
  - This site plan represents a very early stage of design, and pinpointing a a useful number, much less the public's share, is not possible without a range of factors being finalized.
  - The Quayside development will also use the traditional model used across Toronto, which sees a portion of the development charges collected from developers used to build physical and social infrastructure in the community

- **Who is going to build the buildings?**
  - Neither Waterfront Toronto or Sidewalk Labs are construction companies. As with any number of areas of the plan, expert industry partners will be sought to physically produce elements of the plan.
  - As is outlined in the Plan Development Agreement between Sidewalk Labs and Waterfront Toronto, the procurement of third-party developers for building construction and design will be led by Waterfront Toronto

- **Who is going to operate the community centre, etc.? Is Quayside going to cannibalize other communities? Is it going to jump the queue and get preferential treatment?**
  - One of the goal's with Quayside is to foster a strong sense of community, not only internally but in terms of a connection to Toronto as a whole. The RFP clearly outlines the community amenities that Waterfront Toronto expects to be included in the proposal. We are open to innovative operating models, that create a sense of community, build up services in Quayside, while supporting them across Toronto.

- **It looks like any other development? Everyone is doing tall timber? What gives?**
  - Tall timber brings an innovative approach to a centuries-old building concept. Quayside would represent a first of its kind use of Tall Timber in Canada, hopefully proving that we can build housing easier, faster, and cheaper, while helping to foster a burgeoning new industry and the jobs that go along with that.

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- **What about all of the concerns about collecting identifiable data at site? Does this plan address that and other concerns raised by Ann C?**
    - Dr Cavoukian is a world-leading expert on privacy, and having met with Waterfront Toronto understands that we share her commitment to the principles of Privacy by Design. When the full MIDP is released, data governance and privacy will be a critical area of evaluation for Waterfront Toronto, our Digital Strategy Advisory Panel, and our government partners.
    - Specifically we have commitment to not share personal data with third parties, including other Alphabet companies; data cannot be used for advertising purposes; and Privacy by Design embedded in all solutions proposed by Sidewalk Labs

- **How much will the land be worth when this is built?**
    - It is important to remember that much of the land in Quayside will remain dedicated to public uses and enjoyment.
    - It's difficult to forecast the future value of the development at this early stage in the process. As we move forward we will consider the financial assessment and the economic, social and environmental value of Quayside to ensure a positive outcome for Toronto
    - From a land value perspective, part of our evaluation of the MIDP will include the participation of both KPMG and Barry Lyon Consultants, one of the leading real estate valuators in Canada.

- **Who is going to pay for all of this?**
    - Sidewalk Toronto came into this project as both an innovation, and funding partner. When we evaluate the full MIDP, Waterfront Toronto will be looking to ensure that the plan meets our goal of having a minimal amount of public funds invested.

- **For the affordable units, is WT going to throw in the land for free to get them built?**
    - No land has changed hands in the Quayside project, either in title or dollar value. Waterfront Toronto advanced clear goals and objectives for having more affordable housing included in the project, and the MIDP will need to meet those goals

- **SWL is proposing to build timber buildings taller than the building code allows? Are they getting a special deal that other developers aren't?**

    - While the full MIDP plan will be put before the Board of Waterfront Toronto, that is not a final stop on the approvals process. Individual planning approvals

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will need to come from the City on a number of individual proposals if the plan moves ahead to implementation

Procedural questions:

- **Is your board approving this at its Dec 6th meeting?**
  - No, the Board of Waterfront Toronto will review the full Maser Innovation Development Plan, which we are expecting to see in early 2019.
  - This site plan is only an overview of one of the of the MIDP
  -
- **Why did SWL release this now?**
  - Sidewalk is excited about the work they have done and some of the innovations they are proposing for Quayside. They want the public to see how these plans fit with the objectives and goals Waterfront Toronto established for the project
- **Have you talked to the City about zoning issues?**
  - Waterfront Toronto is in constant contact with our government partners regarding zoning, and many other issues relating to the Quayside project specifically, and our work revitalizing Toronto's waterfront overall.

DRAFT

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SIDEWALK TORONTO

Quayside Site Plan

NOVEMBER 29, 2018

WATERFRONTToronto

SIDEWALK LABS

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Sidewalk Labs: Who We Are

Sidewalk Labs

We aim to combine world-class urban design with cutting-edge technology to set new standards for sustainability, affordability, and economic opportunity for Torontonians of all incomes, abilities, and ages.

Sidewalk Toronto

will create a new type of inclusive urban community that puts physical, digital, and social innovation to work for a better quality of life.

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November 2018: Where We Are in the Public Engagement Process

SIDEWALK TORONTO

Roundtable 01

Approach to Innovation

March 20, 2018

Roundtable 02

Responsible Data Use, Streets, and Housing Affordability

May 3, 2018

Roundtable 03

The Building Blocks of Quayside

Aug. 14 & 15, 2018

Roundtable 04

Draft Site Plan, Housing Affordability, Social Infrastructure, Transportation, Sustainability, and Digital Governance

Dec. 8, 2018

Roundtable 05

Agenda TBD

Early 2019

City / Government Public Review & Consultation

MIDP Spring 2019

Master Innovation and Development Plan

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Waterfront Toronto's Evaluation Framework for the MIDP

WATERFRONTToronto

WATERFRONT TORONTO KEY OBJECTIVES

Priority Outcomes and "Must Do's" for the MIDP

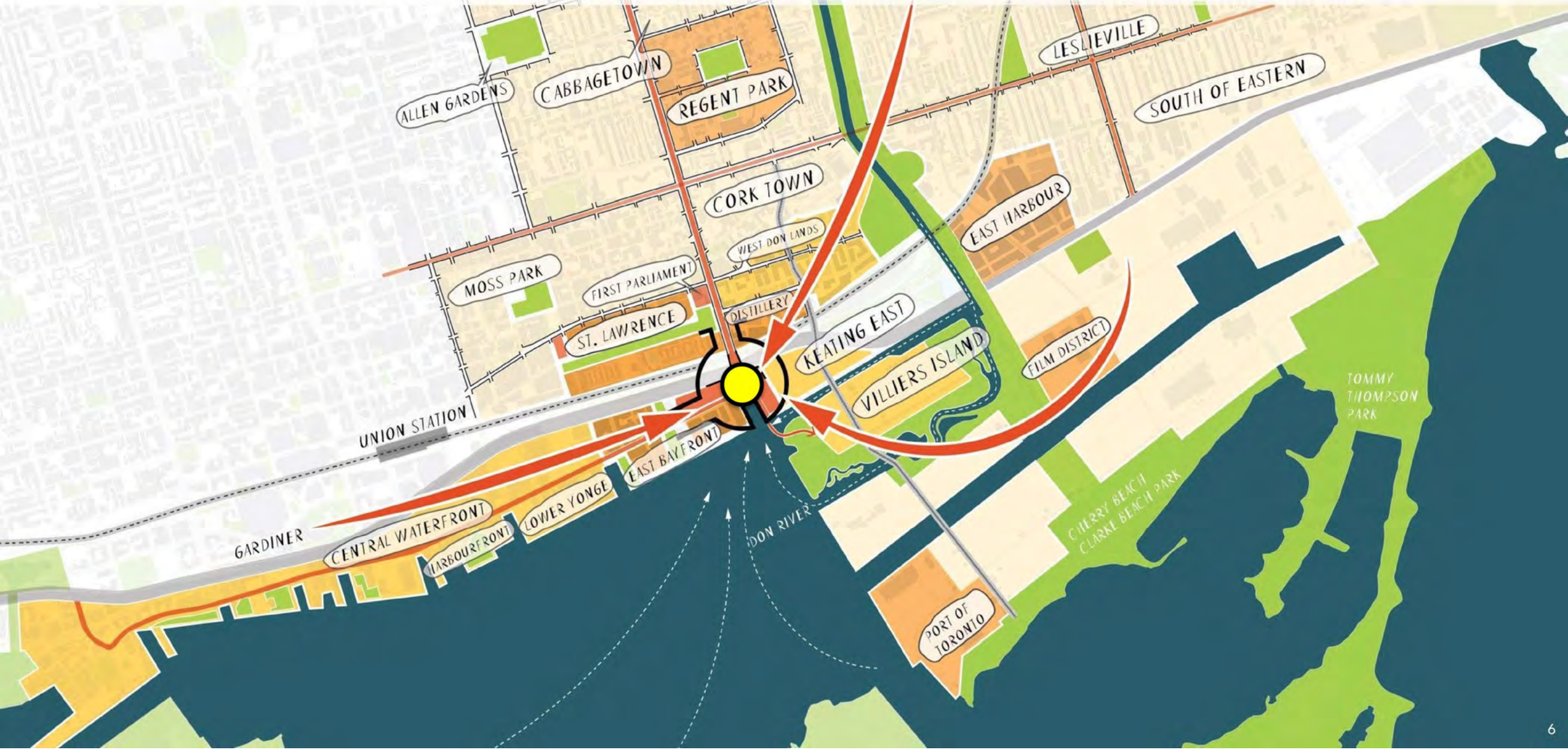
- Job Creation
- Climate Positive
- Affordable Housing
- New Mobility
- Data Privacy & Digital Governance

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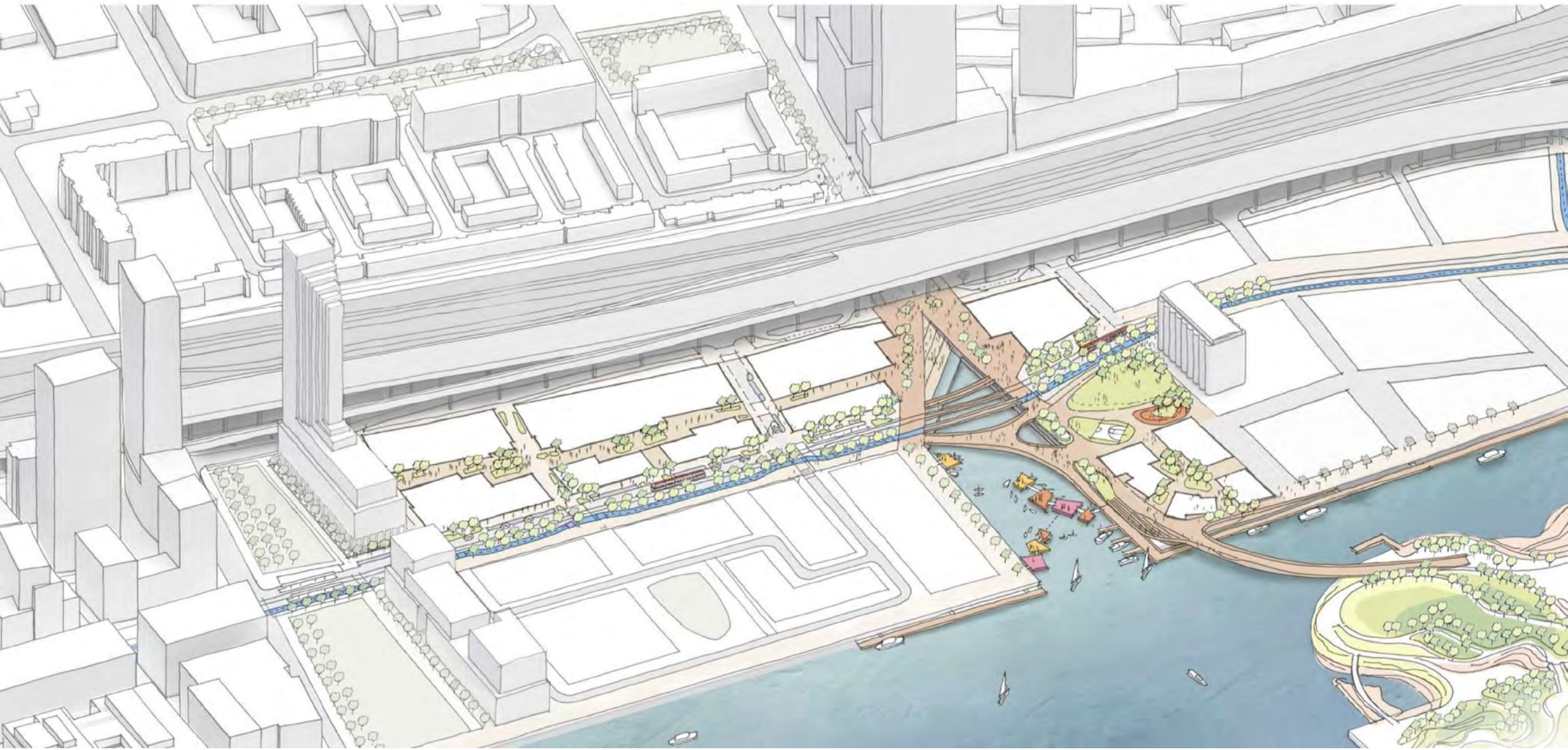


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Quayside among Toronto's Downtown and East Neighbourhoods

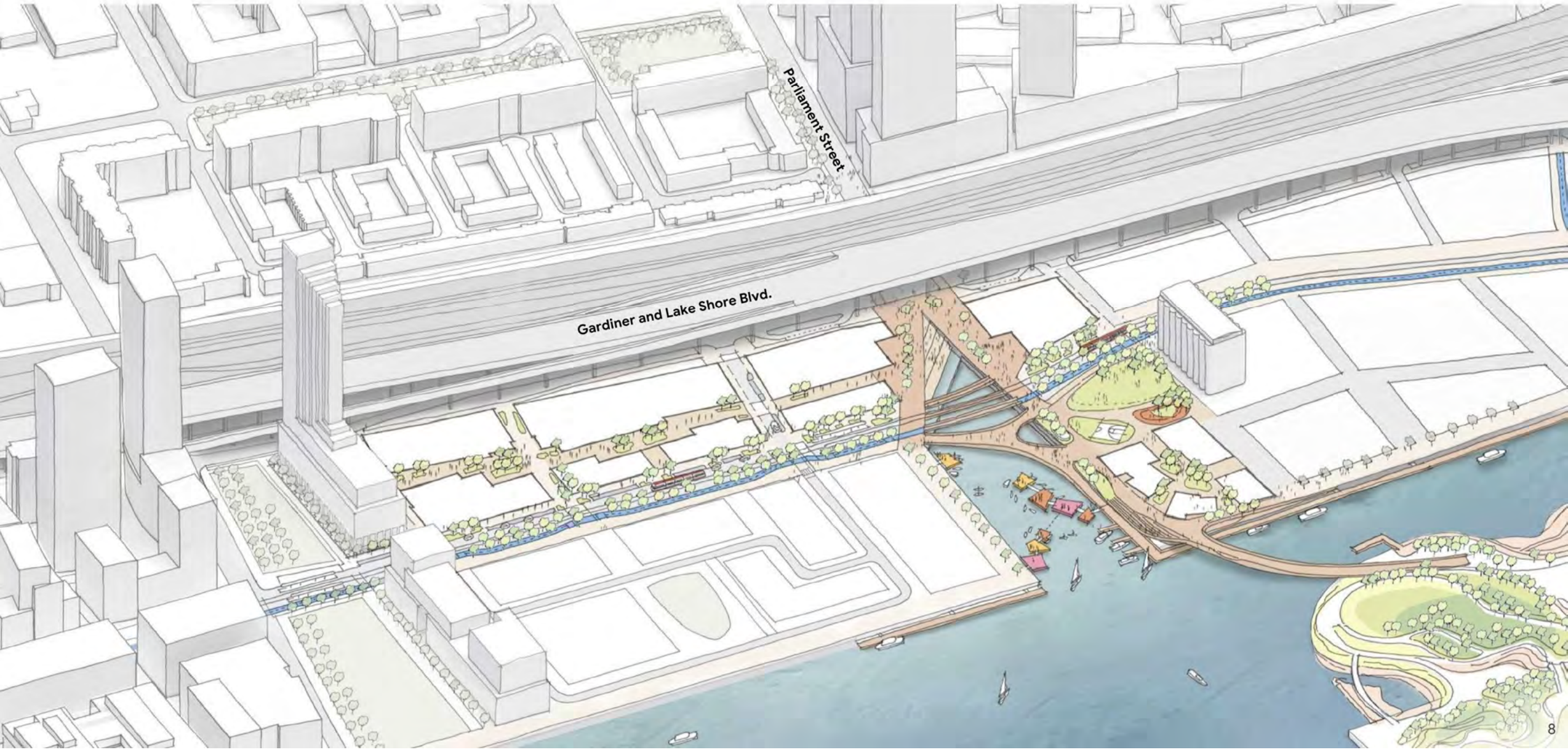


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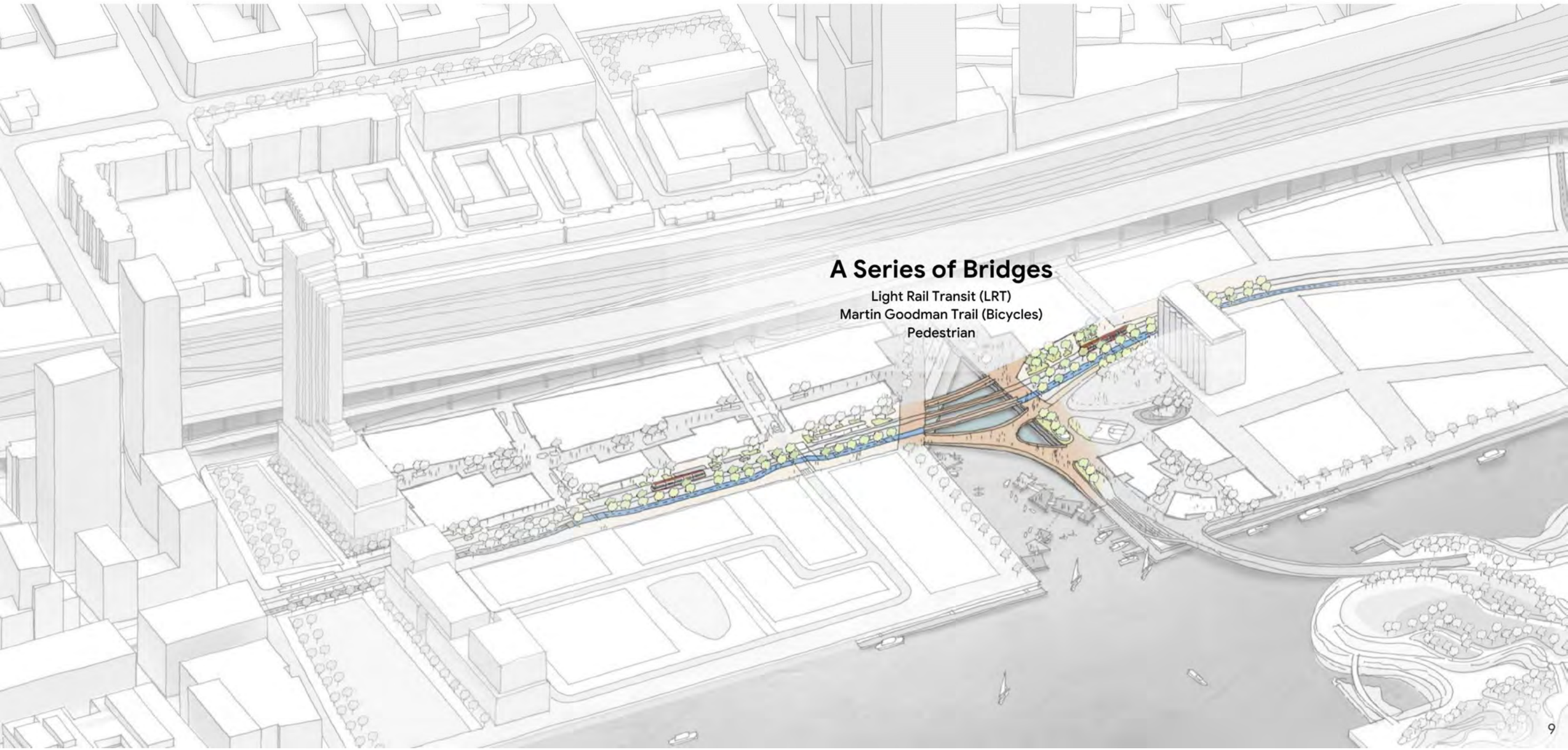
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Quayside: People-first Streets and Public Realm



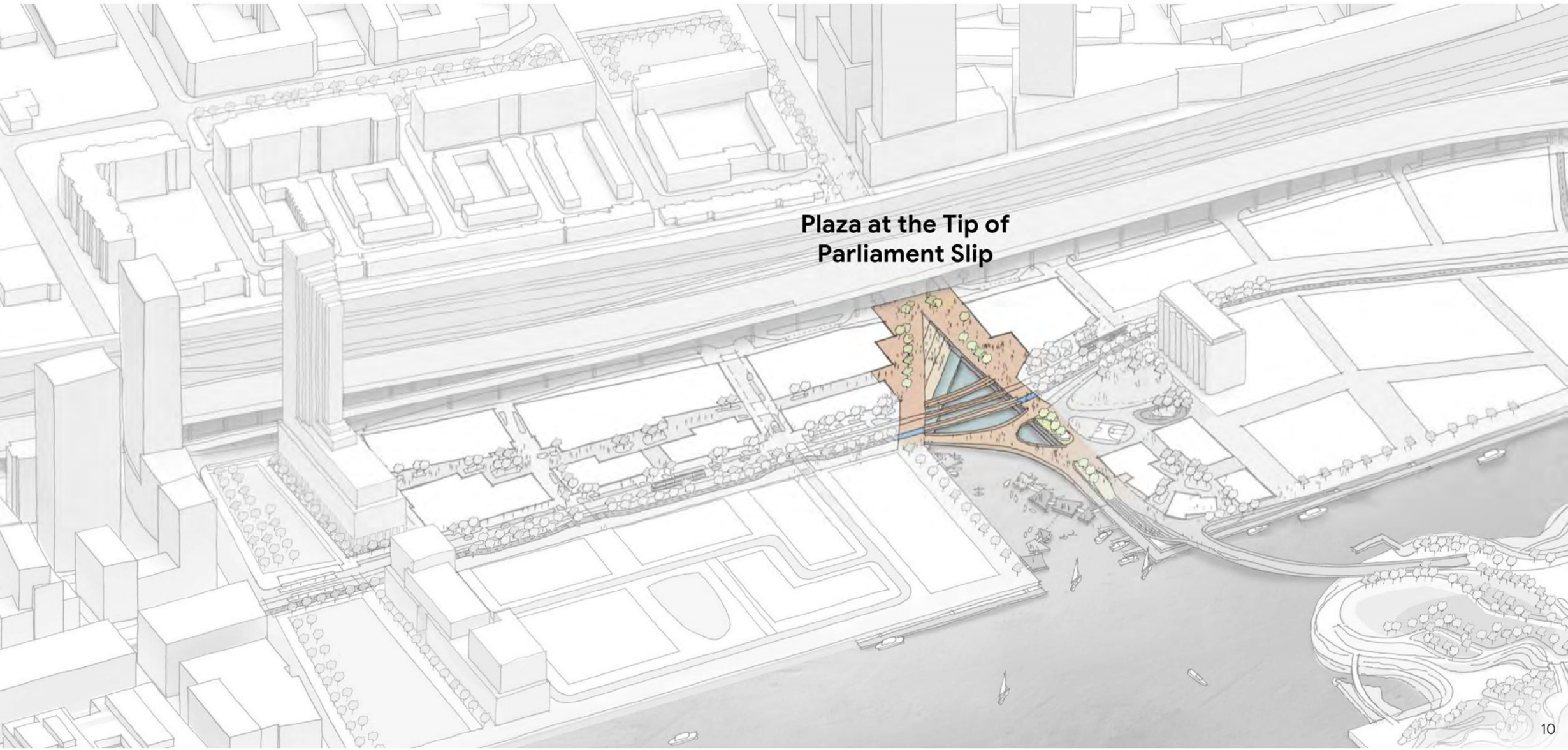
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Quayside: People-first Streets and Public Realm



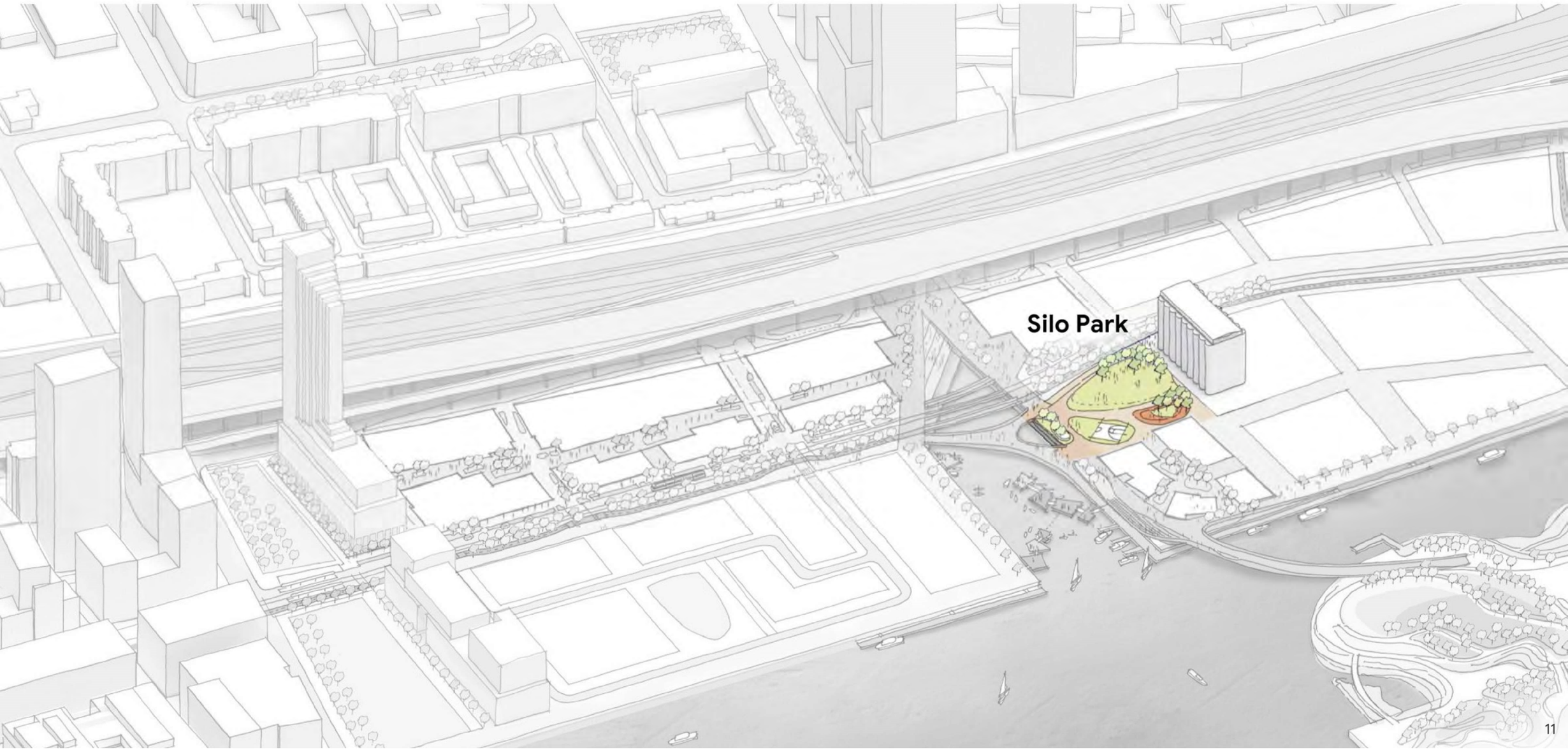
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Quayside: People-first Streets and Public Realm



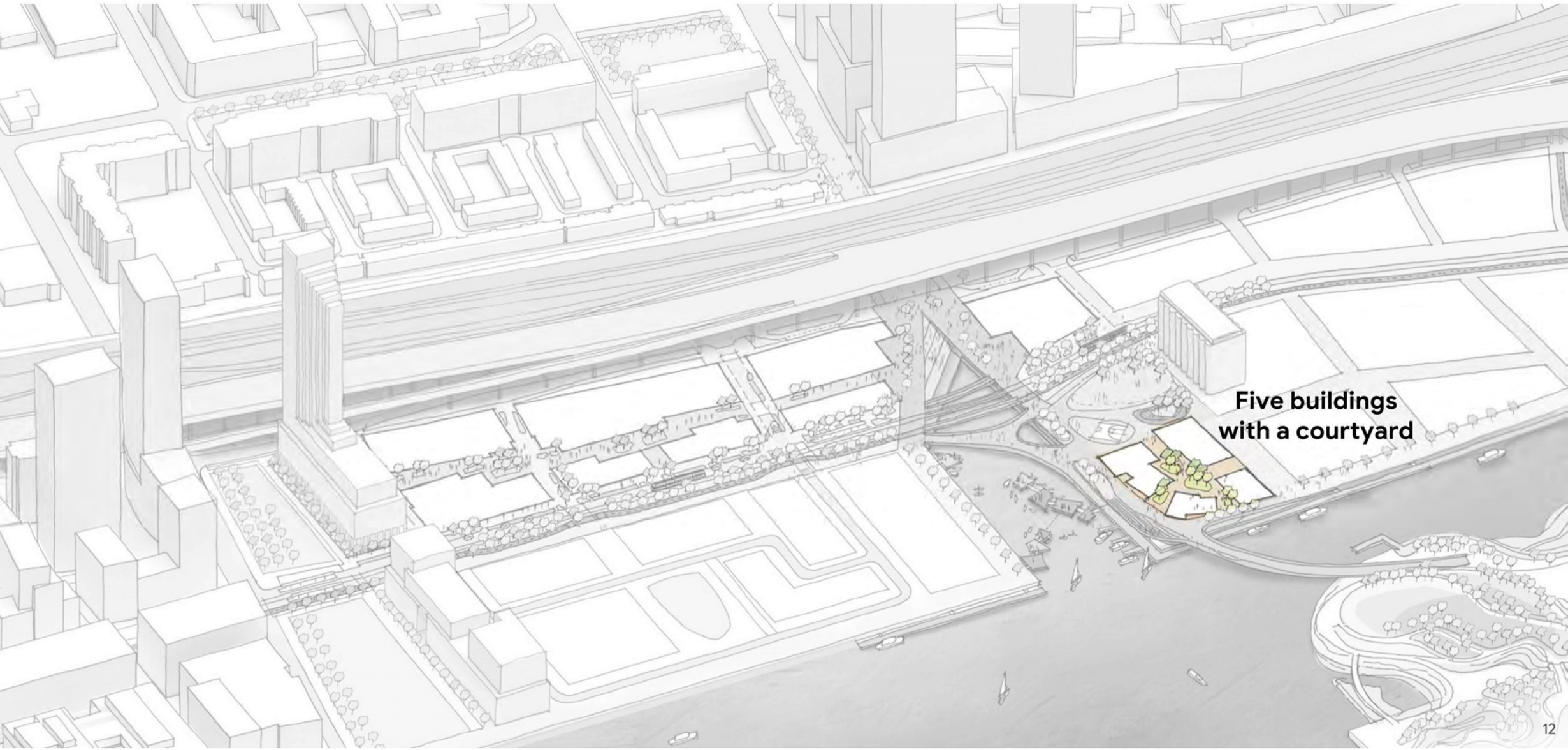
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Quayside: People-first Streets and Public Realm



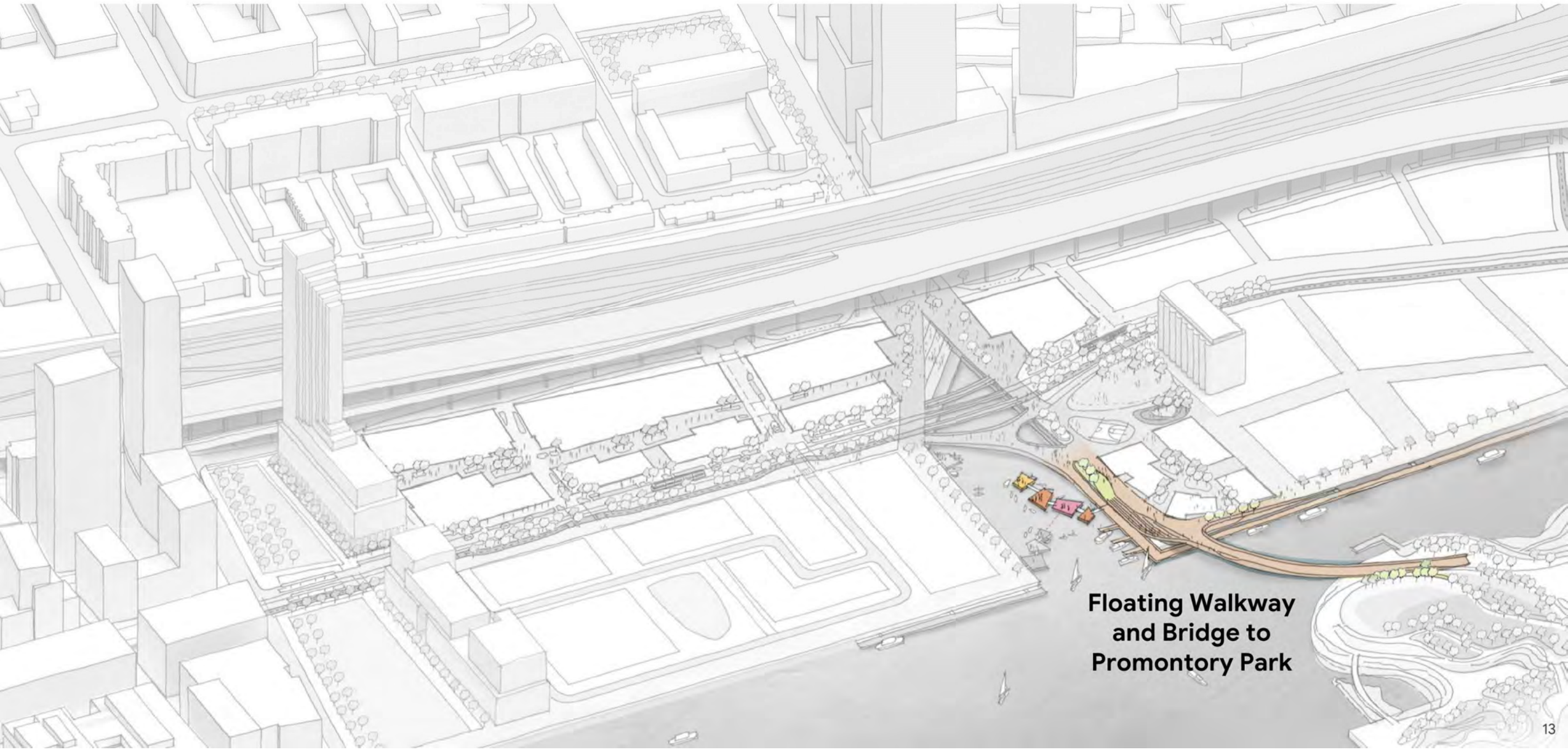
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Quayside: People-first Streets and Public Realm



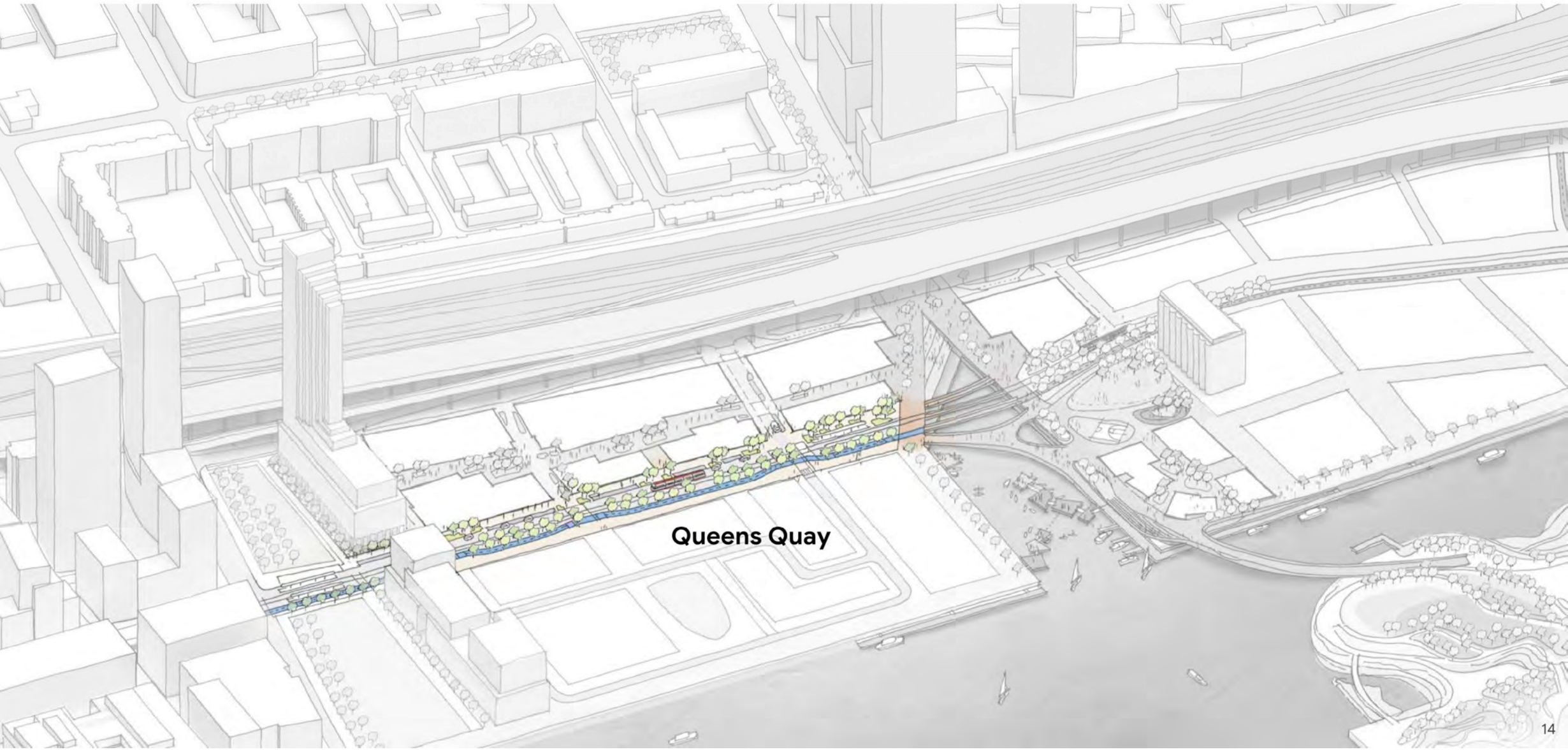
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Quayside: People-first Streets and Public Realm



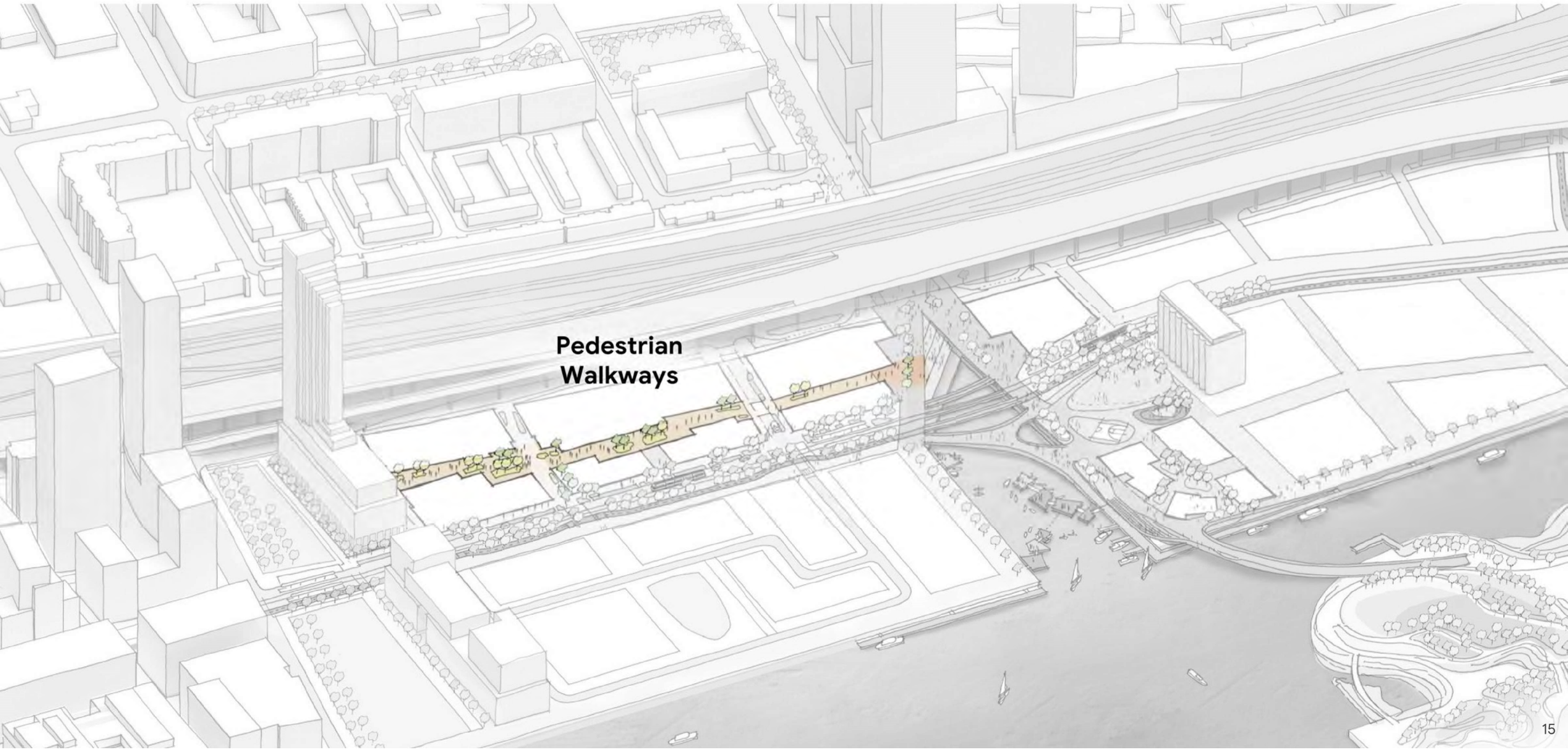
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Quayside: People-first Streets and Public Realm



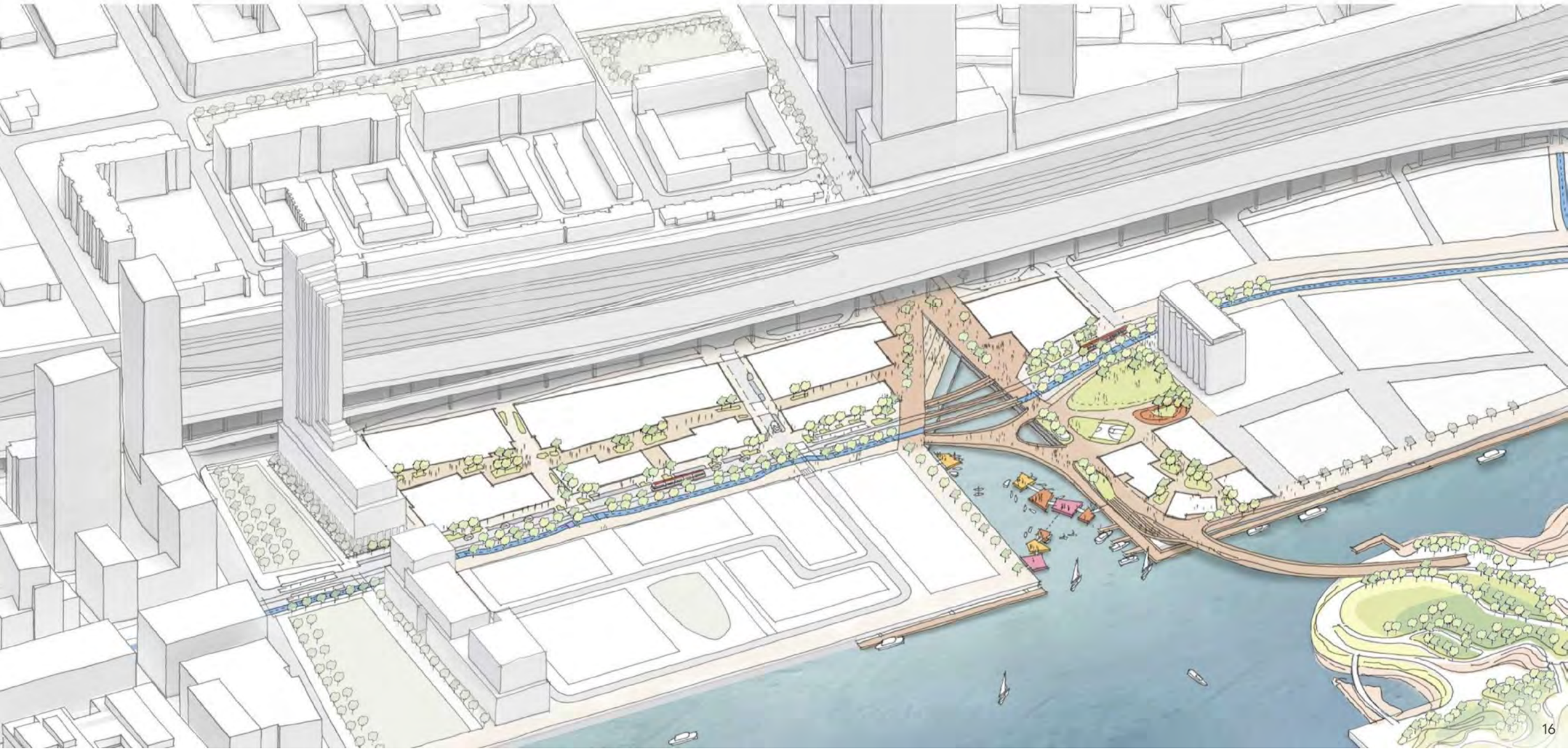
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Quayside: People-first Streets and Public Realm



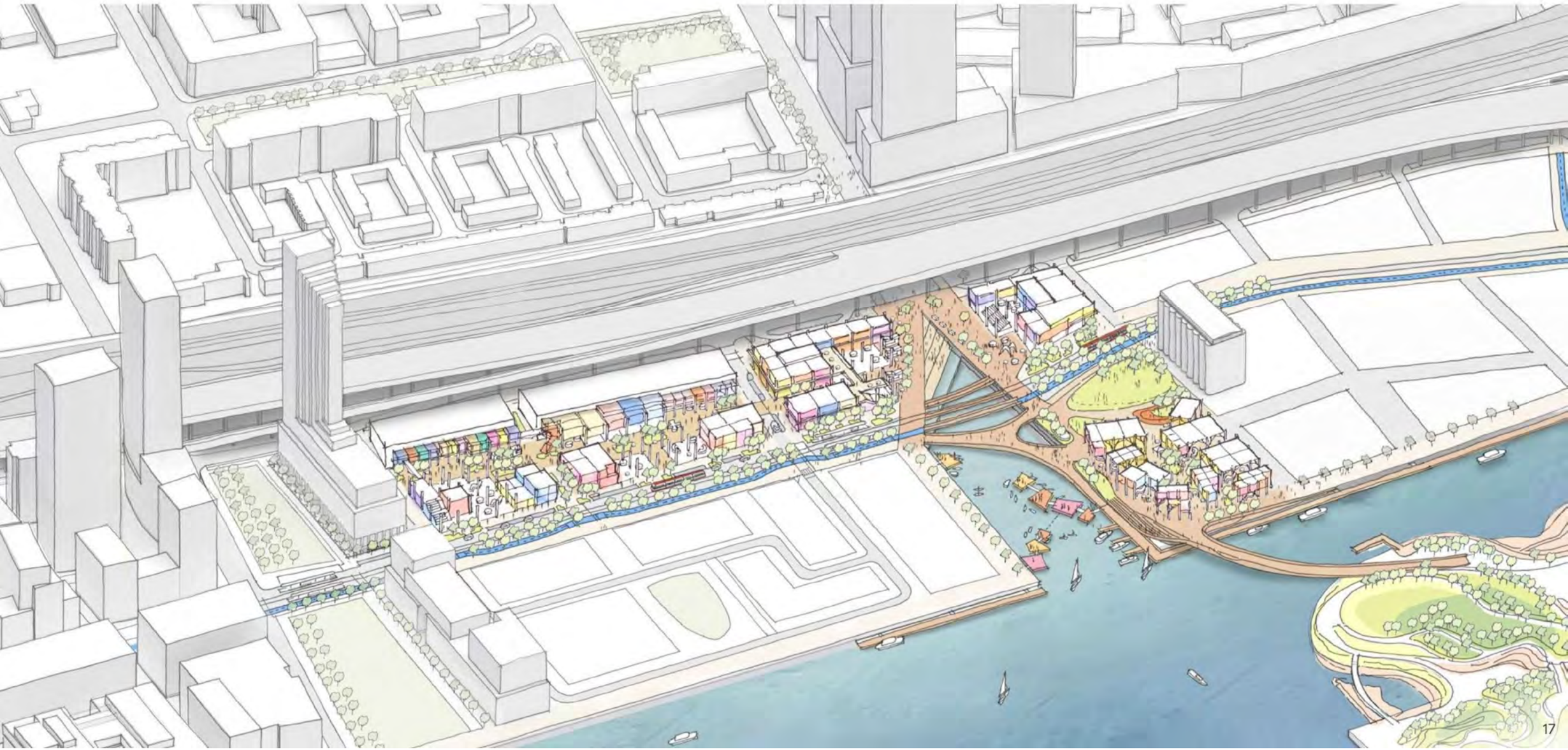
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Quayside: People-first Streets and Public Realm



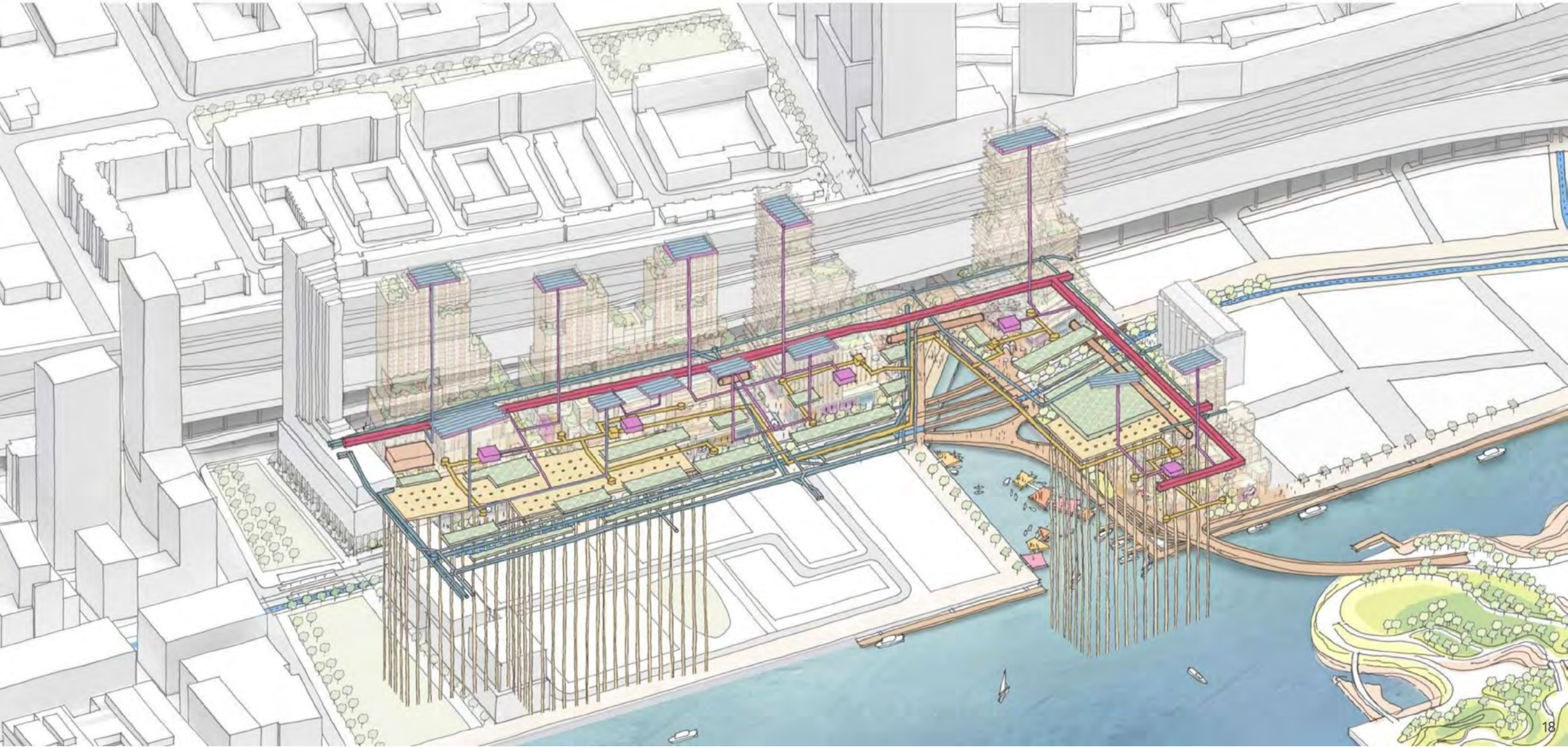
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Quayside: Animating Ground Floor Spaces



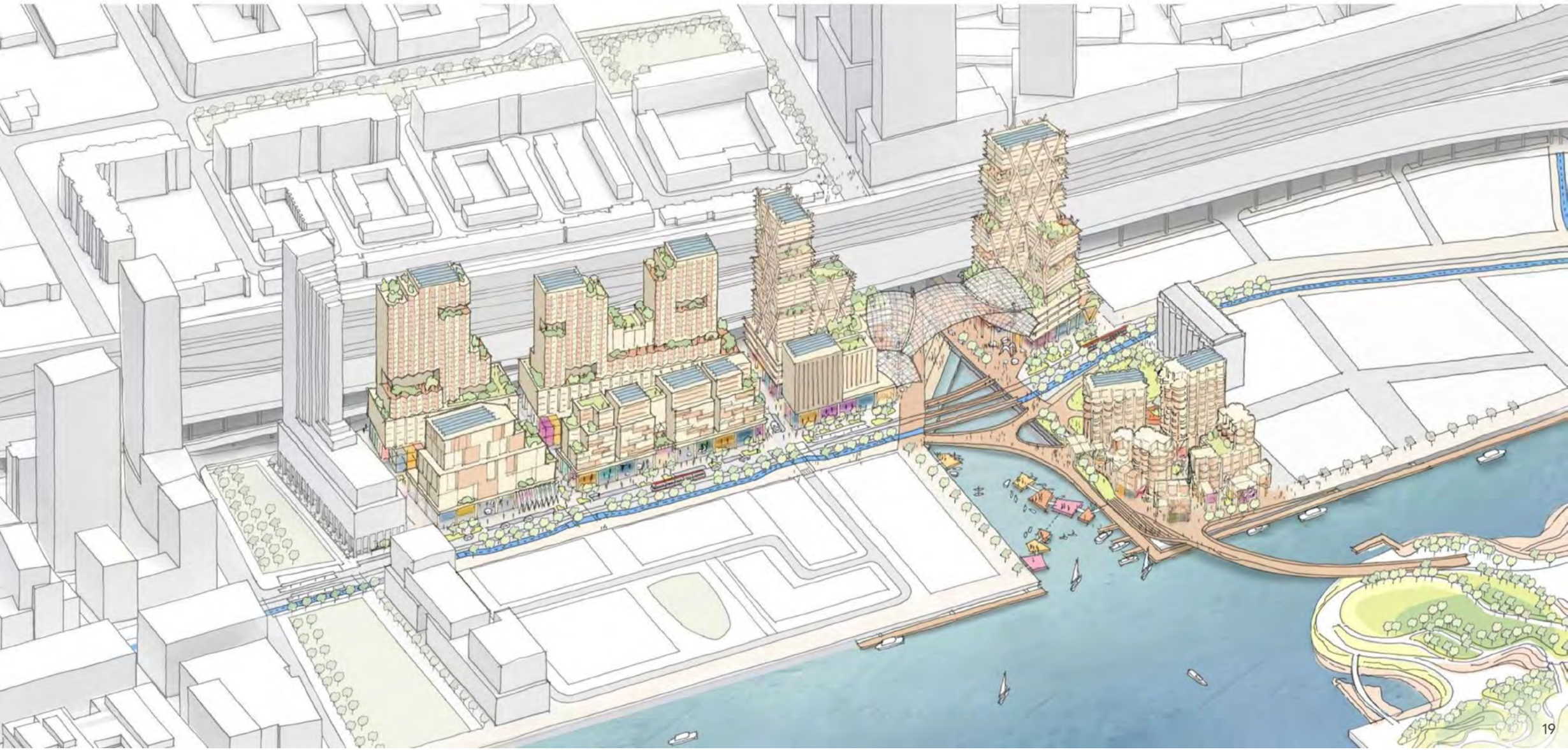
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Quayside: Providing Sustainable Infrastructure



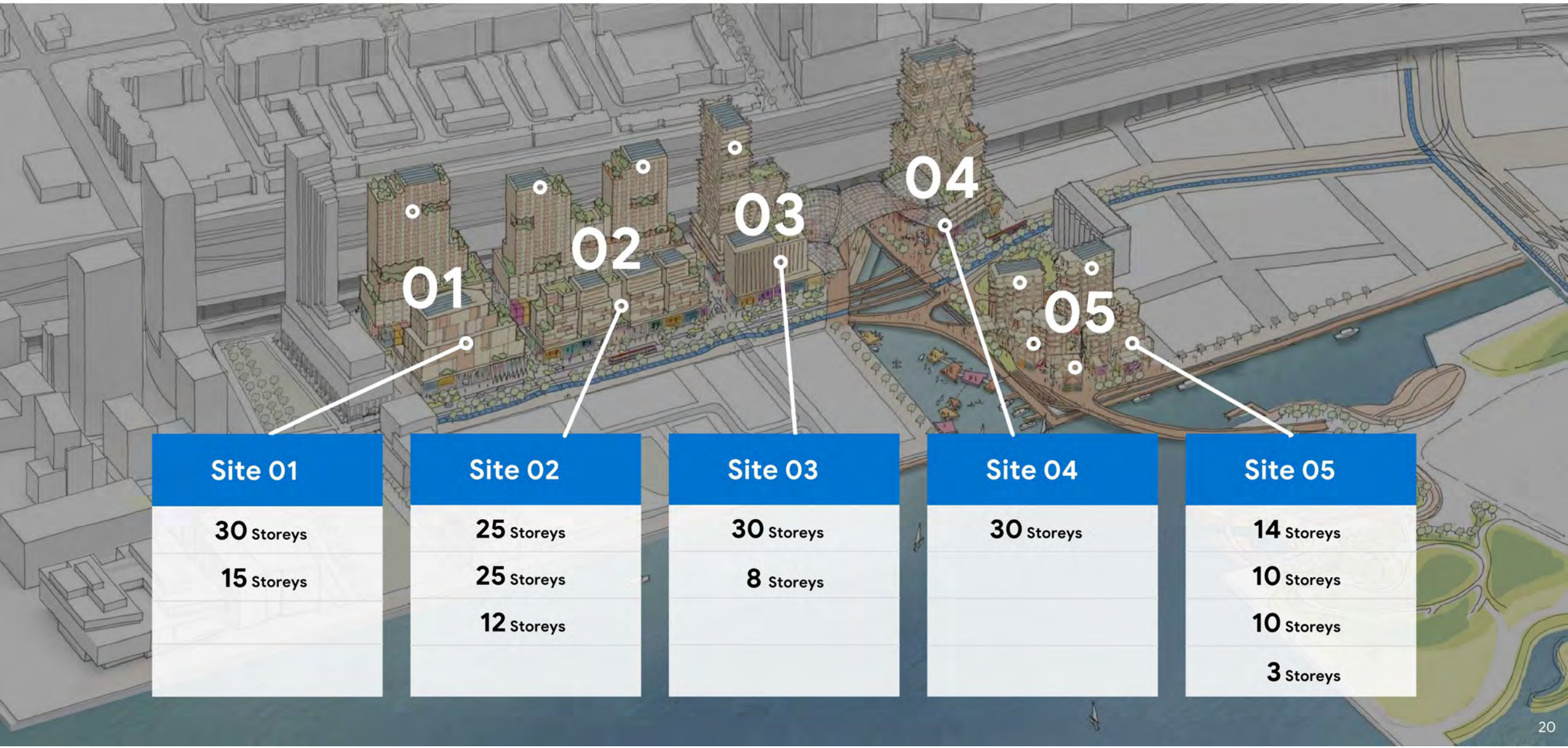
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Quayside: Building Mass Timber



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Quayside Draft Plan: Proposed Program Density up to 3.3M SF



Site 01	Site 02	Site 03	Site 04	Site 05
30 Storeys	25 Storeys	30 Storeys	30 Storeys	14 Storeys
15 Storeys	25 Storeys	8 Storeys		10 Storeys
	12 Storeys			10 Storeys
				3 Storeys

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Quayside Program: Proposed Program Density up to 3.3M SF

Baseline Program*	Proposed Quayside Site Plan	Economic Development
93% Residential	**68%** Residential (11% Flexible Loft Space)	**9,000+** Construction jobs created in Ontario
20% Affordable Housing	**40%** Below-Market **20% Affordable Housing** (includes 5% deeply affordable) **20% Middle-Income Housing** (includes 5% shared equity)	**3,900** Jobs located at Quayside long-term
7% Commercial / Retail	**20%** Commercial (3% Flexible Loft Space)	• 3,400 Office Jobs
3,100 Residential Units	**12%** Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)	• 275 Retail Jobs
6,200 Residents	**2,500** Residential Units (approx.)	• 150 Production Jobs
	5,000 Residents (approx.)	• 75 Community Jobs

* Rough estimates based on Zoning Maps

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Unprecedented Commitment to Affordable Housing

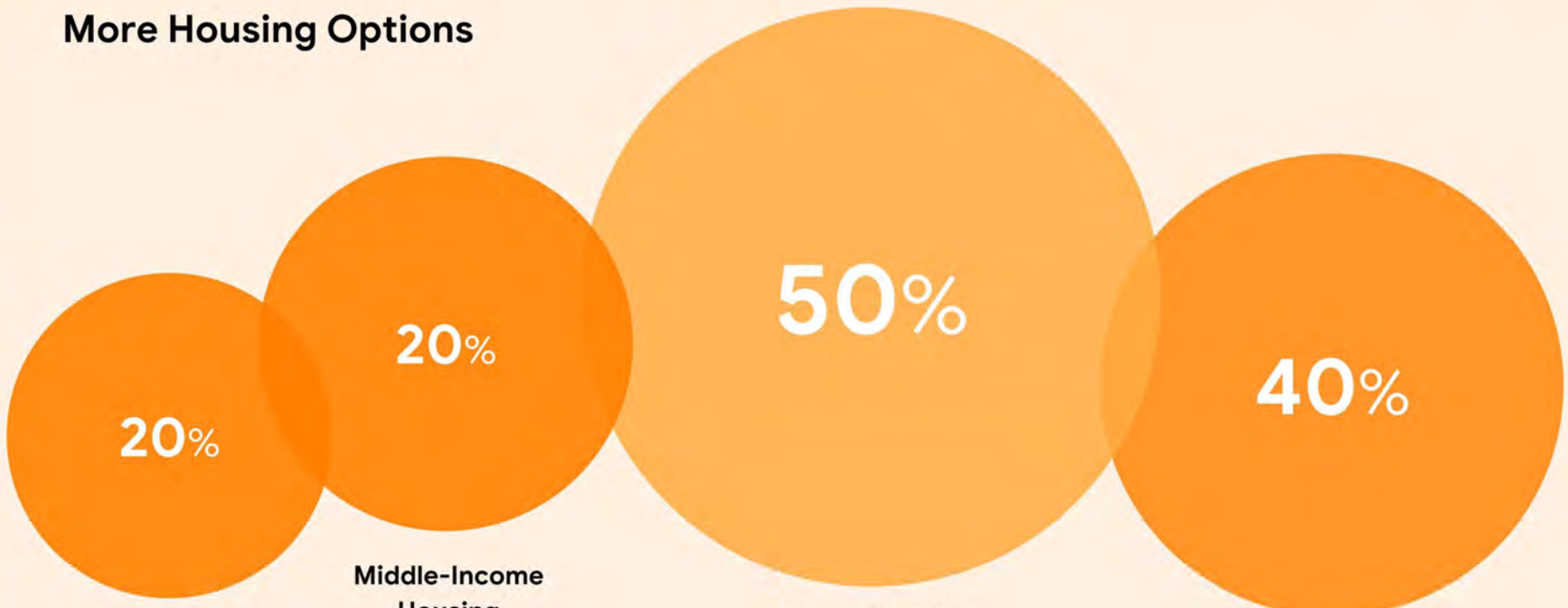
The Quayside affordable housing program mix will demonstrate a new approach and serve a much broader portion of the population.

More Affordability

40%

Below-Market Housing at Quayside

More Housing Options



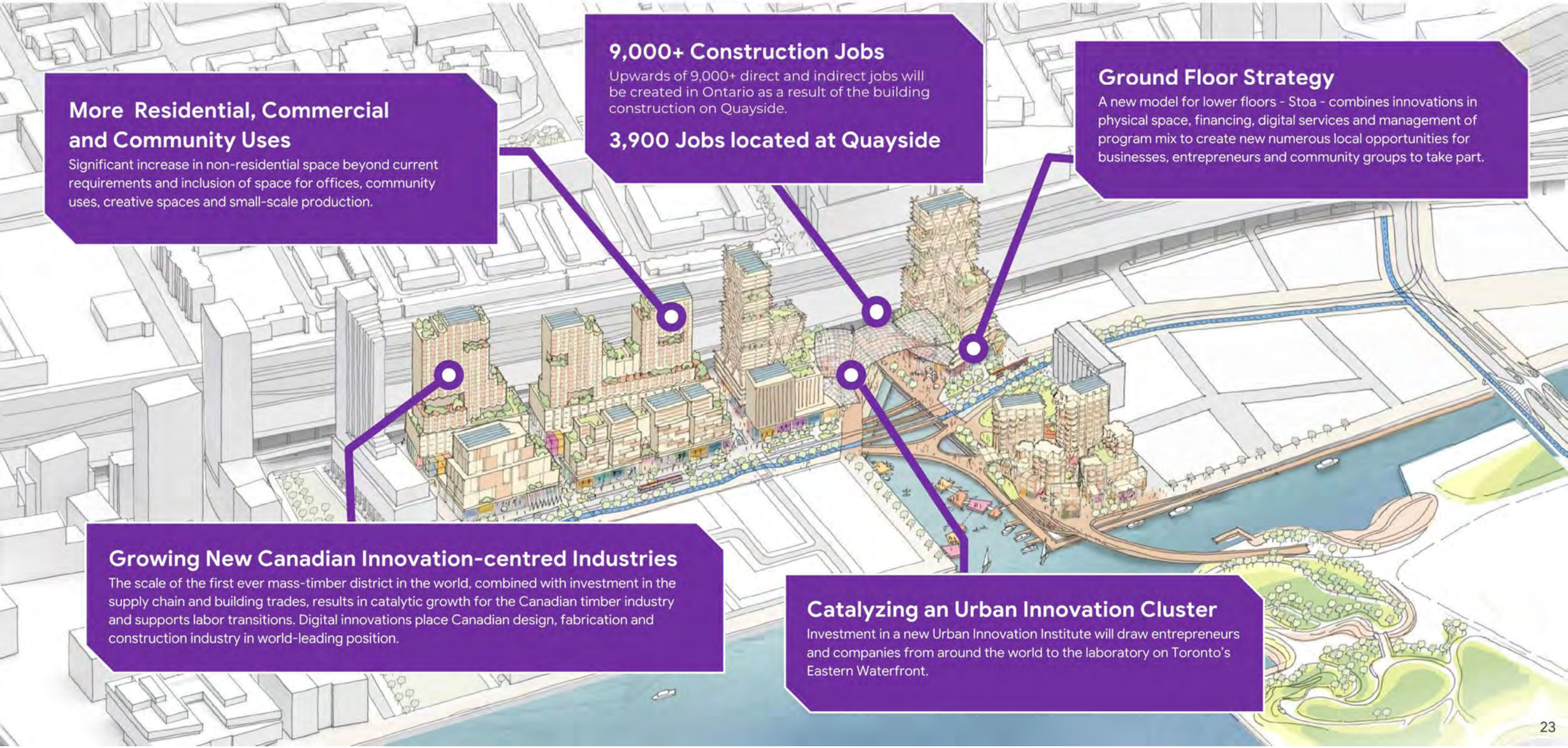
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Quayside: New Jobs and Economic Development

Quayside will be the beginning of a new approach to urban development on Toronto's Waterfront that sets a new standard for urban development in the 21st century.

Job Creation | Climate Positive | Affordability & Inclusivity | New Mobility

SIDEWALK TORONTO



More Residential, Commercial and Community Uses

Significant increase in non-residential space beyond current requirements and inclusion of space for offices, community uses, creative spaces and small-scale production.

9,000+ Construction Jobs

Upwards of 9,000+ direct and indirect jobs will be created in Ontario as a result of the building construction on Quayside.

3,900 Jobs located at Quayside

Ground Floor Strategy

A new model for lower floors - Stoa - combines innovations in physical space, financing, digital services and management of program mix to create new numerous local opportunities for businesses, entrepreneurs and community groups to take part.

Growing New Canadian Innovation-centred Industries

The scale of the first ever mass-timber district in the world, combined with investment in the supply chain and building trades, results in catalytic growth for the Canadian timber industry and supports labor transitions. Digital innovations place Canadian design, fabrication and construction industry in world-leading position.

Catalyzing an Urban Innovation Cluster

Investment in a new Urban Innovation Institute will draw entrepreneurs and companies from around the world to the laboratory on Toronto's Eastern Waterfront.

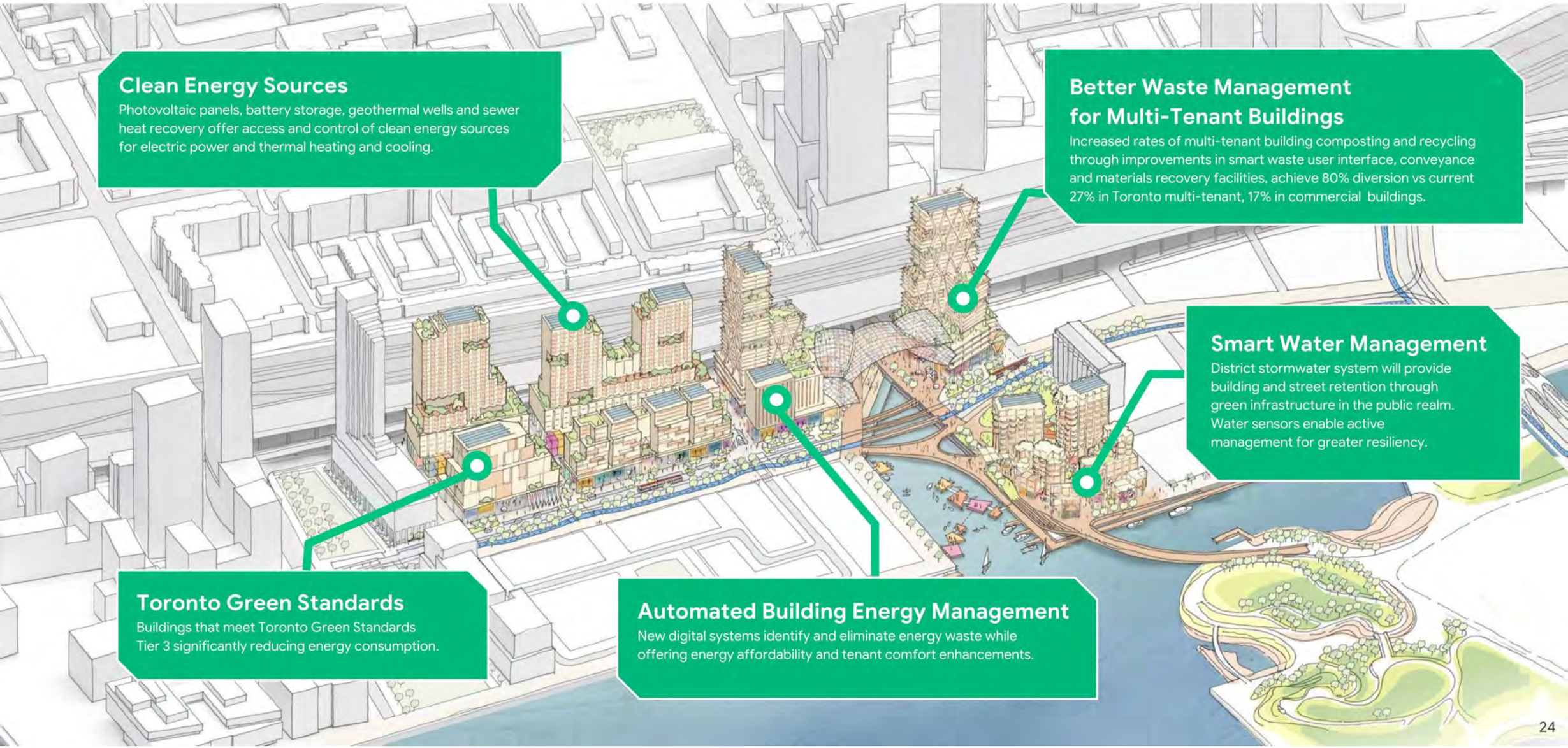
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Quayside: 75%-85% Reduction in GHG Emissions

Job Creation | **Climate Positive** | Affordability & Inclusivity | New Mobility

SIDEWALK TORONTO

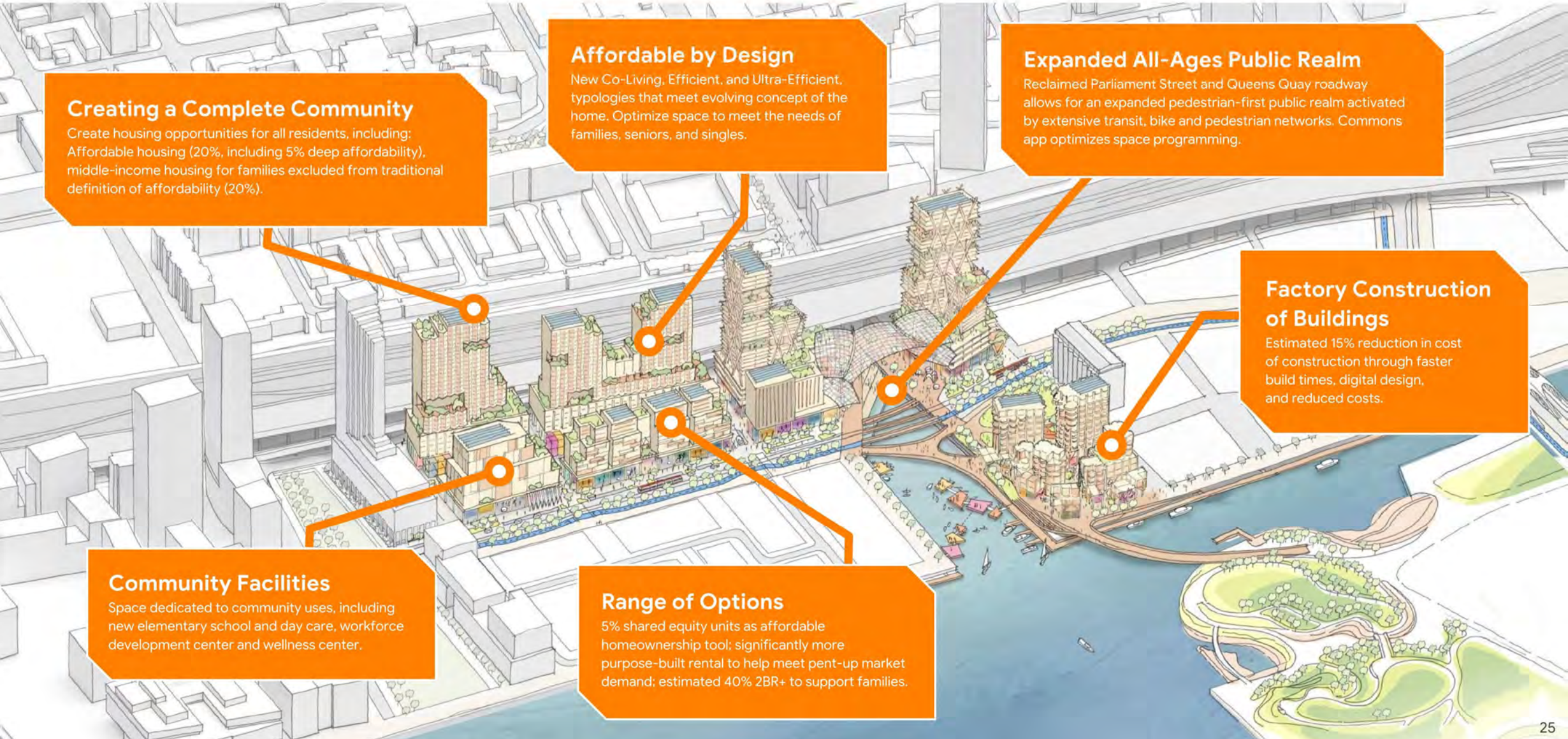
Sidewalk Labs will invest in a series of innovations that drastically reduce greenhouse gas (GHG) emissions below levels in comparable projects, enable smarter management of resources, and reduce the cost of future upgrade and maintenance to the system.



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Quayside: 40% Below-Market Housing

The housing program mix at Quayside is specifically designed to address the housing gridlock facing the city today. It will provide options and opportunities to more Torontonians, enabling an inclusive complete community on the waterfront.



Creating a Complete Community

Create housing opportunities for all residents, including: Affordable housing (20%, including 5% deep affordability), middle-income housing for families excluded from traditional definition of affordability (20%).

Affordable by Design

New Co-Living, Efficient, and Ultra-Efficient, typologies that meet evolving concept of the home. Optimize space to meet the needs of families, seniors, and singles.

Expanded All-Ages Public Realm

Reclaimed Parliament Street and Queens Quay roadway allows for an expanded pedestrian-first public realm activated by extensive transit, bike and pedestrian networks. Commons app optimizes space programming.

Factory Construction of Buildings

Estimated 15% reduction in cost of construction through faster build times, digital design, and reduced costs.

Community Facilities

Space dedicated to community uses, including new elementary school and day care, workforce development center and wellness center.

Range of Options

5% shared equity units as affordable homeownership tool; significantly more purpose-built rental to help meet pent-up market demand; estimated 40% 2BR+ to support families.

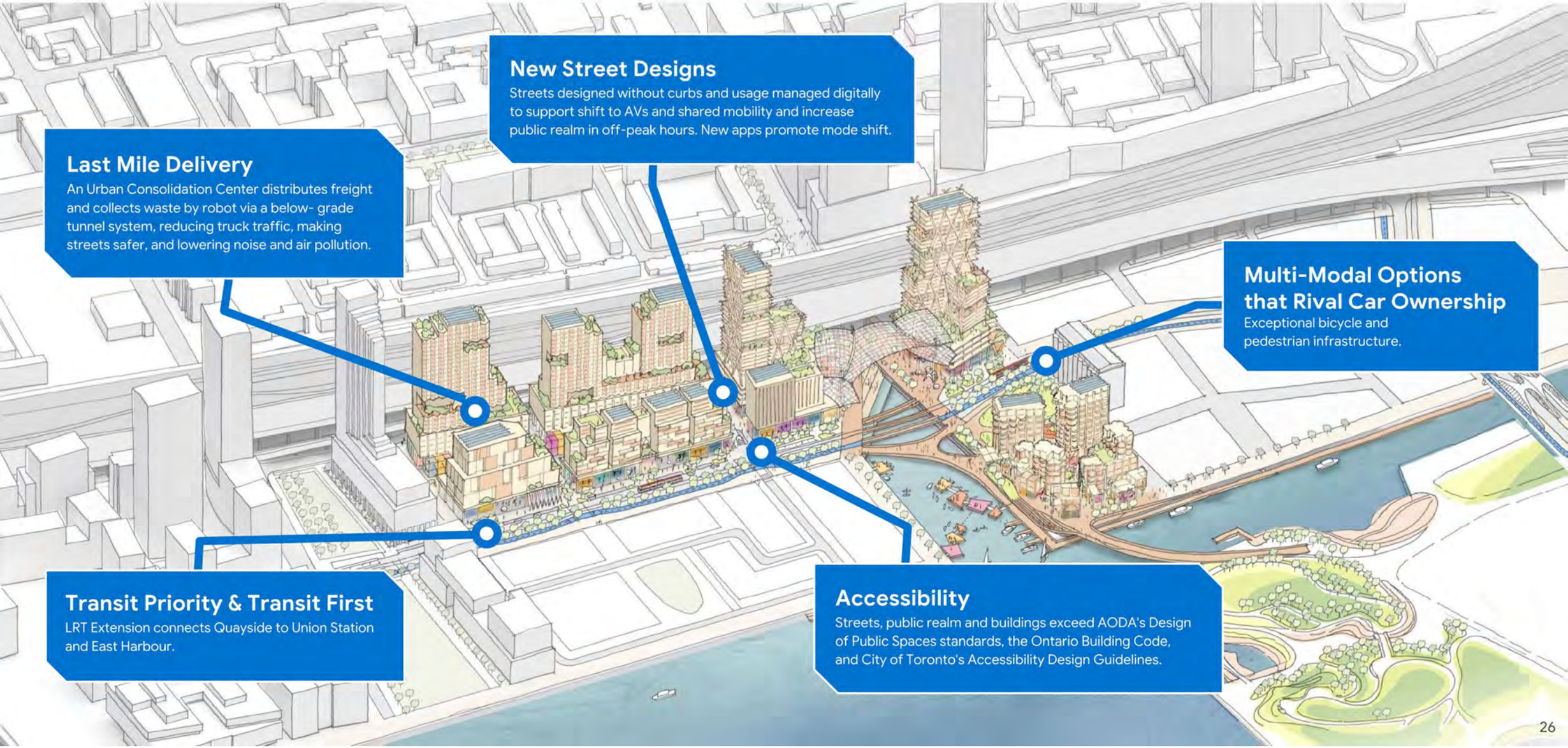
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Quayside: Reducing Congestion and Improving Safety

Growth is creating challenges to traditional ways of moving around, but support for transit and innovations in mobility management offer opportunities to help people and goods move easily.

Job Creation | Climate Positive | Affordability & Inclusivity | **New Mobility**

SIDEWALK TORONTO



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Quayside Site Plan

9,000+ Construction Jobs

Over 9,000 direct and indirect jobs will be created in Ontario as a result of the building construction at Quayside.

Canadian Mass Timber

Catalyzing the Canadian timber industry through an entire district built with mass timber, resulting in new jobs in Ontario and 15% reduction in cost of construction.

40% Below-Market Housing

20% affordable housing, including 5% deep affordability, and 20% middle-income housing, including mid-range rental and shared equity.

Towards Climate Positive

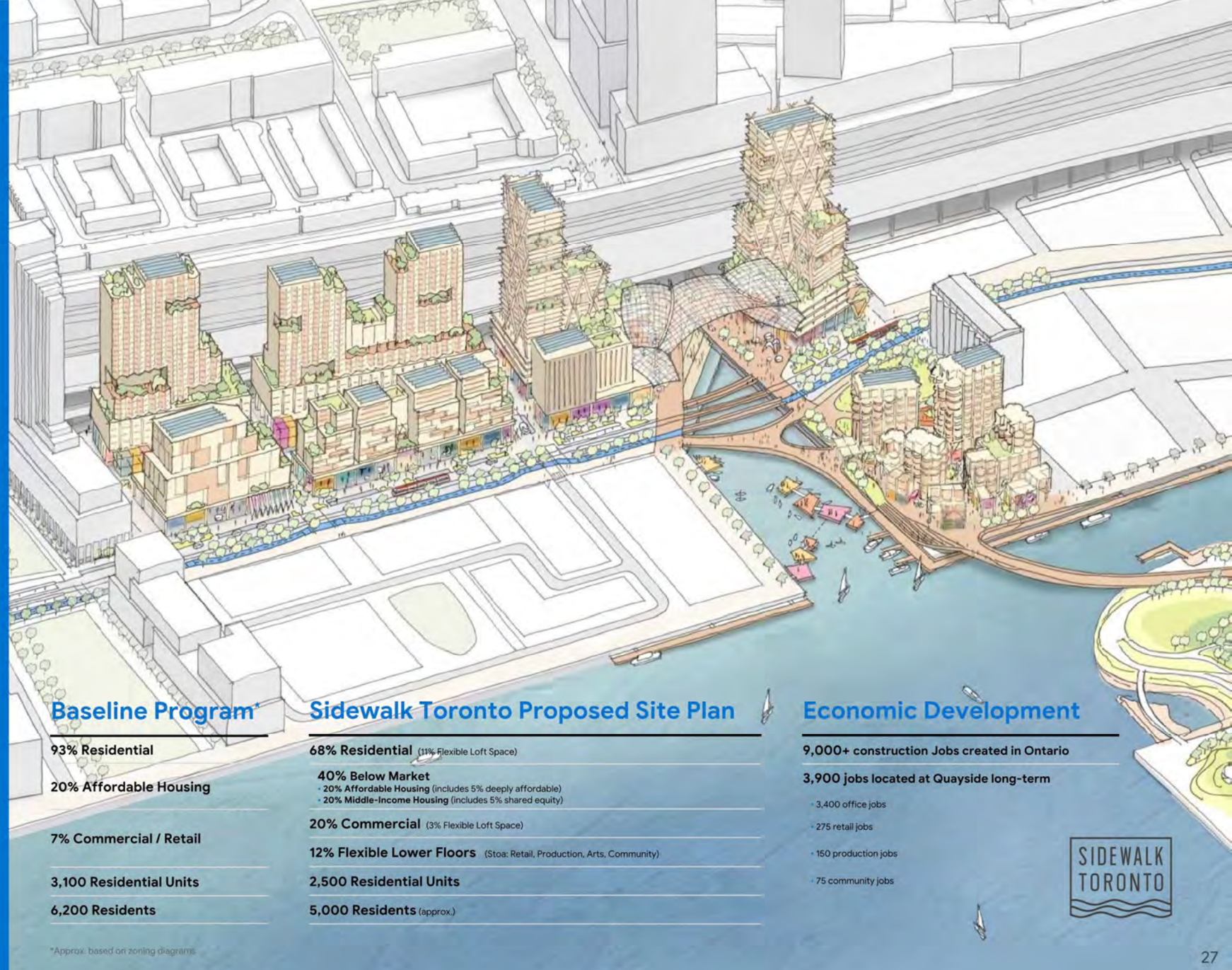
Targeting 75 - 85% reduction in greenhouse gas emissions at Quayside compared to standard development: from 6.3 tons CO_2 per Torontonian, to <1 ton per Quaysider.

Streets that Work

New mobility including support for the Light Rail Transit, a Vision Zero neighbourhood, and getting ready for an automated vehicle future.

Civic Data Trust

Independent governance over the collection and use of urban data, to protect privacy, promote innovation, and safeguard the public interest.



Baseline Program*

- 93% Residential
- 20% Affordable Housing
- 7% Commercial / Retail
- 3,100 Residential Units
- 6,200 Residents

Sidewalk Toronto Proposed Site Plan

- 68% Residential (11% Flexible Loft Space)
- 40% Below Market
  - 20% Affordable Housing (includes 5% deeply affordable)
  - 20% Middle-Income Housing (includes 5% shared equity)
- 20% Commercial (3% Flexible Loft Space)
- 12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)
- 2,500 Residential Units
- 5,000 Residents (approx.)

Economic Development

- 9,000+ construction Jobs created in Ontario
- 3,900 jobs located at Quayside long-term
  - 3,400 office jobs
  - 275 retail jobs
  - 150 production jobs
  - 75 community jobs

*Approx. based on zoning diagrams

SIDEWALK TORONTO

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THANK YOU

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Public

WATERFRONToronto

December 8, 2018

WELCOME - Roundtable 4

Plenary Session

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Louroz Mercader

Communications and Public Engagement Manager

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Indigenous Land Acknowledgement

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Agenda

Plenary Session: 9:30 - 10:30 am / 2:00 - 3:00 pm

- **Engagement Update**
- **City of Toronto:** Waterfront Secretariat
- **Waterfront Toronto:** Objectives and Evaluation
- **Sidewalk Labs:** Quayside: A New Neighbourhood

Breakout Sessions

1. **Quayside Site Plan & Transportation**
2. **Social Infrastructure / Housing Affordability**
3. **Digital Governance**
4. **Sustainability**

Morning Sessions	Afternoon Sessions
10:40 - 11:30 am	3:10 - 4:00 pm
11:40 - 12:30 pm	4:10 - 5:00 pm

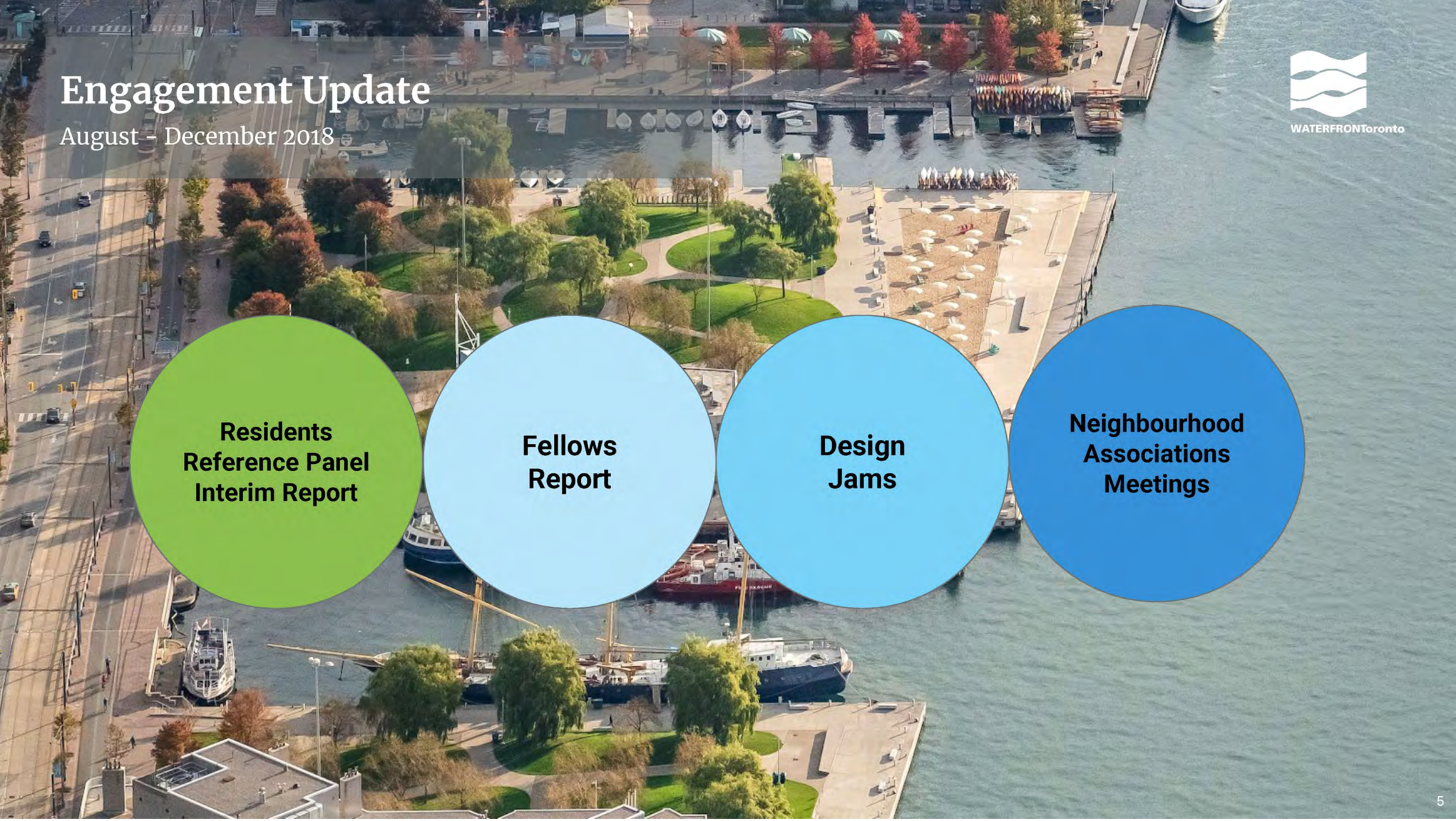


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Engagement Update

August - December 2018

WATERFRONToronto



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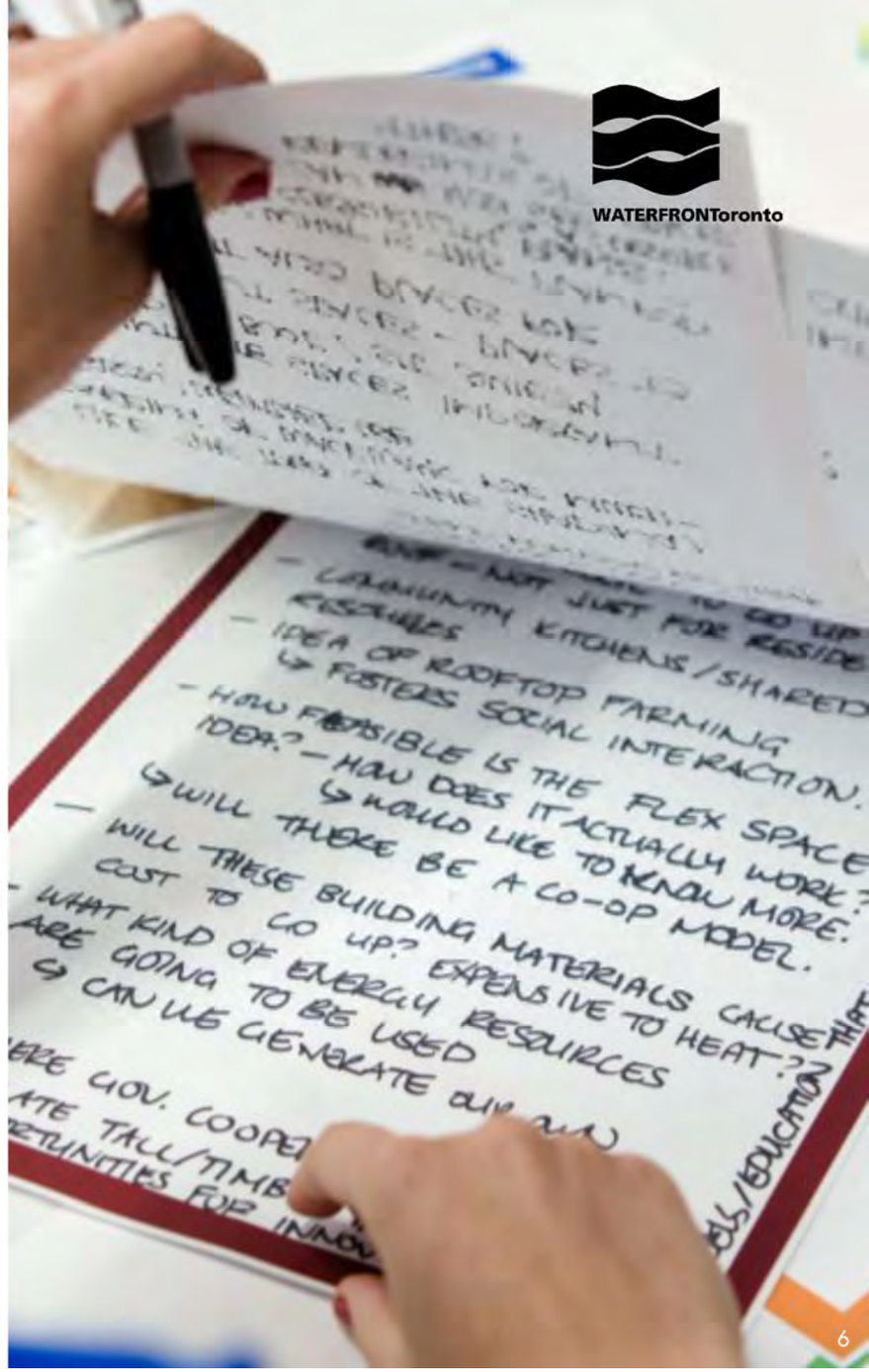
Engagement Update

Residents Panel Interim Report

- Identified guiding values of **Community**, **Inclusivity**, **Functional Beauty**, **Sustainability, Innovation**, and **Accountability**.

- Identified issues and opportunities in six areas:

  1. Public oversight and innovation
  2. An accessible and inclusive public realm
  3. Safe, efficient mobility options
  4. Responsible Data Use
  5. Being smart and sustainable
  6. Inclusive and affordable



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Engagement Update

Fellows Final Report

- The Fellows issued their final report on November 8th, and it included **27 recommendations** based on their learnings from visits over the summer to Amsterdam, Copenhagen, Malmo, Boston, New York, and Vancouver.

- The report focused on **housing**, **public realm**, **design**, **data**, **public policy** and **governance**, and **mobility**.

- Recommendations included setting ambitious targets for affordable housing, detailed recommendations on a civic data trust, and doing more to partner with Indigenous communities in the design and programming of Quayside.



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Engagement Update

Design Jams

- **Vertical Living** - addressed the experience of "isolation" in vertical living and workshopped a number of strategies to create connectivity and a sense of community.

- **Water Connections** - focus on the difficulty accessing the waterfront – highlighting the lack of physical access but also social barriers to being able to enjoying waterfront activities

- **People on Wheels** - safety can be achieved with an expansive, consistent, and reliable network of dedicated cycling lanes in the city—those that are made separate from motor vehicles with distinct markers

- Read the Summary Report: www.sidewalktoronto.ca



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WATERFRONToronto

David Stonehouse

Director, Waterfront Secretariat, City of Toronto

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WATERFRONToronto

Meg Davis

Chief Development Officer

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Quayside Public Roundtable: December 8, 2018

Realizing the Waterfront's Potential:

Setting strong foundations for long-term economic, social, and environmental well-being

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Waterfront Toronto is working to revitalize the lands by Lake Ontario, transforming past industrial sites into **thriving neighbourhoods** that support **economic vitality** and enhance **quality of life**.

Our mandate comes from the three orders of government; our resources come from both public and private sources.

As we work on behalf of Torontonians, Ontarians, and all Canadians, every decision we make is guided by our vision of **one vibrant waterfront that belongs to everyone**.

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Waterfront Toronto's Roles

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Catalyst and Steward

Creating enduring value through well-designed and vibrant cultural, recreational, civic and public spaces



Revitalization Lead / Landowner

Advancing Complete Communities that address the need for housing, mobility, accessibility, connectivity and inclusivity



Partner

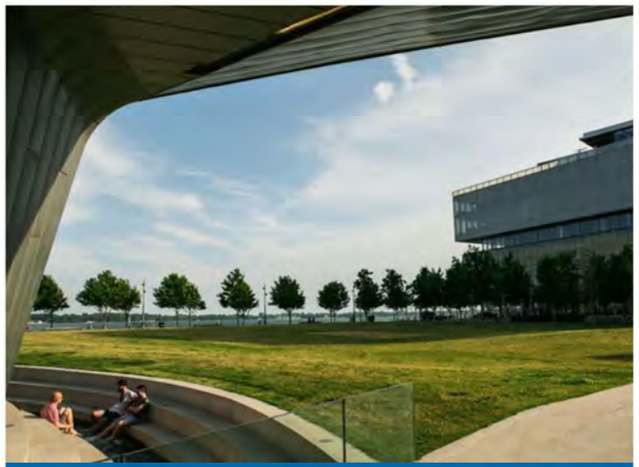
Leveraging innovation and partnerships to deliver economic growth and jobs

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Public Accountability



Reducing urban sprawl



Building sustainable communities



Increasing affordable housing



Creating parks & public spaces



Expanding public transit



Driving economic competitiveness

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Key Corporate Metrics

Corporate Social Responsibility and Sustainability Report

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Environment

- 24 LEED® Gold or LEED® Platinum Certified buildings (completed or underway)
- Important flood protection unlocking land for revitalization, enhancing the surrounding natural ecology and improving resiliency
- Resiliency and Innovation Framework for Sustainability that sets the bar even higher for waterfront revitalization in the years ahead



Social

- 496 affordable units completed, 80 nearing completion, planning another 1,000 in the West Don Lands and East Bayfront — all with ultra-high speed internet access
- Over 13km of waterfront trails and promenades
- Over 36 hectares of parks and public spaces



Economic

- $1.6 billion investment in waterfront renewal has created:
  - $4.1 billion in economic output for the Canadian economy
  - $848 million in revenue to government
  - 14,100 full-time person years of employment
  - Increased and accelerated private sector investment

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Quayside

Evaluating the Master Innovation and Development Plan

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Quayside RFP Objectives

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Sustainability, Resiliency and Urban Innovation:

Create a globally significant demonstration project that advances a new market model for climate-positive urban developments

Complete Communities:

Establish a complete community that emphasizes quality of place, and provides a range of housing types for families of all sizes and income levels within a robust mix of uses, including public open space, culture, recreation, vibrant retail, education-related activities and offices

Economic Development and Prosperity:

Provide a testbed for Canada's cleantech, building materials and broader innovation-driven sectors to support their growth and competitiveness in global markets

Partnership and Investment:

Develop a new partnership model that ensures a solid financial foundation, manages financial risk and secures revenue that funds future phases of waterfront revitalization

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Quayside in the context of the Designated Waterfront Area

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Quayside

A new type of mixed-use, complete community

Quayside potential to become a global hub for urban innovation

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Evaluating the MIDP

WATERFRONToronto

When the Master Innovation and Development Plan (MIDP) is submitted to Waterfront Toronto by Sidewalk Labs, that is not the end of this process but still near the beginning:

- We undertook a thorough, fair and transparent process in selecting Sidewalk Labs as the Innovation and Funding Partner for Quayside.
- Our evaluation of the MIDP will be equally thorough and demanding, in order to determine if the MIDP should move forward.
- The innovation we are seeking must serve the public interest, fulfill our aspirations and meet the requirements we have set for Quayside.
- The whole plan will be evaluated by Waterfront Toronto, and, to be implemented, individual components will be subject to city approvals, as well as federal and provincial regulations.
- Should the MIDP move forward, there will be a series of additional agreements and consultation will continue.

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Building the Evaluation Framework

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The framework for the evaluation will look at how the MIDP addresses three overall questions:

1. *How many of our goals and objectives does the MIDP meet, and how well does it meet those targets?*

2. *Does the MIDP align with the planning framework for the waterfront?*

3. *Is the proposed business plan viable and in the public interest?*

Waterfront Toronto's evaluation will include an integrated and collaborative due diligence and review process with external experts.

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Process to Refining Goals and Objectives

The Goals and Objectives for Quayside were developed through a robust and thoughtful five step process. We have linked a number of Waterfront Toronto's long-standing objectives: **Corporate Objectives, RFP Objectives, key Government Policy Objectives, and detailed Priorities.**

The result is a detailed list of MIDP Goals and Objectives, which also benefited from third party due diligence review.

1. Corporate Objectives
2. RFP Objectives
3. Government Policy & Strategy Review
4. Waterfront Toronto Priorities
5. 3rd Party Due Diligence and Metrics work



Waterfront Toronto's Goals and Objectives:

- ➔ Key elements of the Evaluation Framework
- ➔ Waterfront Toronto defines the "what", Sidewalk Labs proposes the "how"

Waterfront Toronto took a thoughtful and reasoned approach in developing these objectives, focusing on identifying priority outcomes—rather than preferred tactics to achieve said outcomes—with as few prescriptive requirements as possible.

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Evaluation Framework

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Waterfront Toronto has established:
(more detailed information is available on our website)

Goals and Objectives:

- Job Creation and Economic Development
- Sustainability and Climate Positive Development
- Housing Affordability
- Mobility and Transit
- Urban Innovation
- Buildings
- Complete Communities
- Public Realm

Implementation Requirements:

- Data Privacy and Digital Governance
- Public Engagement
- Local Developer Participation
- Design Excellence
- Partnership Model

Establishing a list of implementation requirements the MIDP must address

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MIDP Priority Outcomes

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Of these Goals and Objectives, Waterfront Toronto has identified five overarching Priority Outcomes:



- Job Creation and Economic Development
- Sustainability and Climate Positive Development
- Housing Affordability
- New Mobility
- Urban Innovation

Robust Data Privacy and Digital Governance are central to success and to the realization of all Goals and Objectives

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Implementation Requirements

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Waterfront Toronto's evaluation framework established a series of critical fronts, and a list of implementation requirements the MIDP "**Must Do**" in the following areas:

- **Data Privacy and Digital Governance**
- **Public Engagement**
- **Local Developer Participation**
- **Design Excellence**
- **Partnership Model**

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Implementation Requirements

WATERFRONToronto

Data Privacy and Digital Governance

- Proposals for approaches to protocols that could inform **a new global standard in data governance**
- **Compliance** with or exceedance of all applicable laws, regulations, policy documents and contractual obligations
- Methods and practices that provide for **meaningful consent** for data collection
- **Data Minimization**
  - Processing should only use as much data as is required.
  - Data collected can only be used for the initial purpose collected. Further uses require additional consent.
- **Data security and privacy**
  - Commitment to not share or link personal data with 3rd parties - including other Alphabet companies (i.e. Google) without consent
  - Data **cannot** be used for advertising purposes
  - Privacy by Design embedded in all solutions proposed
  - Architecture that ensures protection against the unauthorized access or data corruption throughout its lifecycle
- **Commitment and accountability to the ethical** use of technology
- **Shared Benefits of Data** – Data and solutions will be open where feasible and appropriate. Data will be shared with government open data repositories to ensure equitable access and opportunity to benefit.

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Evaluating the Evaluation

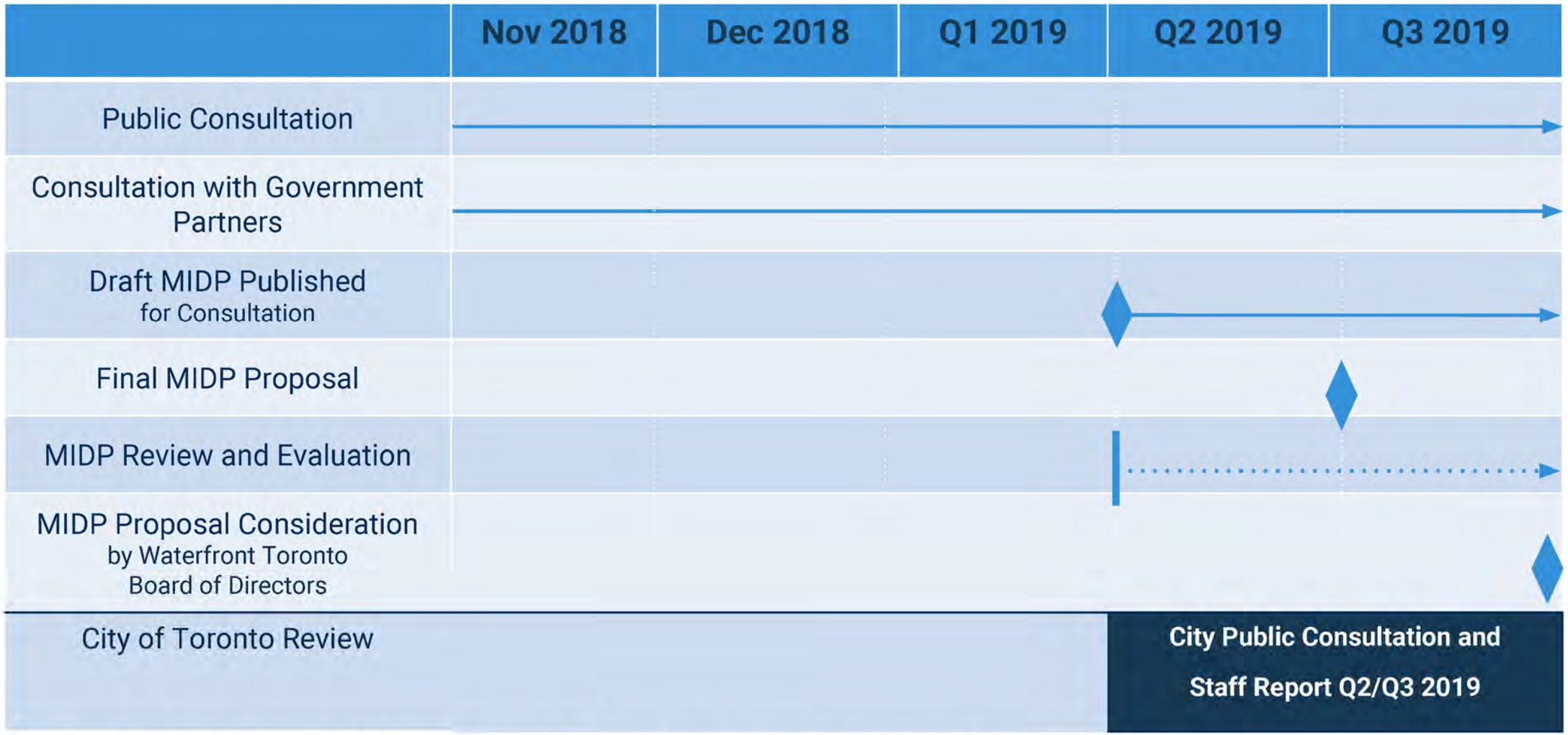
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- Accountability and transparency remain at the core of Waterfront Toronto
- Feedback has informed our evaluation plan, objectives and criteria
- Before we receive the MIDP, our evaluation criteria, objectives, and priorities will be considered by:
  - ✓ the community, including the Quayside Stakeholder Advisory Committee
  - ✓ our government partners
  - ✓ Waterfront Toronto's Digital Strategy Advisory Panel
  - ✓ Waterfront Toronto's Board of Directors and Investment, Real Estate and Quayside Committee

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Current MIDP Timeline

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Note: Should the MIDP receive all of the needed approvals, we would move towards implementation agreements and continue consultation with all stakeholders

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a waterfront for everyone

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Sidewalk Labs – Why We Are Here

SIDEWALK TORONTO

SIDE WALK LABS

We aim to combine world-class urban design with cutting-edge technology to set new standards for sustainability, affordability, and economic opportunity for Torontonians of all incomes, abilities, and ages.

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Quality of Life for All

Community Well-Being

The physical environment influences everyday life and its design plays an important role in supporting community well-being, enhancing quality of life and enabling healthy lifestyles.

Diversity, Equity & Inclusion

Inclusive communities and economic growth require a commitment to values of diversity, equity and inclusion.

Sidewalk Toronto is planning a neighbourhood where all are welcome and have an opportunity to flourish and thrive.



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Sidewalk Labs Role

Essential Catalyst

Foundational & Sustainable Infrastructure	Improved Quality of Life Accessible to All	Sustainable Economic Development	Limited Real Estate Development
Providing essential infrastructure that the market alone will not yet provide.	Providing innovative digital services and design principles that enable quality-of-life improvements for Torontonians and Canadians.	Catalyzing new jobs with core anchors and conditions for third-party innovation.	Developing real estate in the early phases until ideas are proven out.

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Waterfront Toronto's Evaluation Framework for the MIDP

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WATERFRONTToronto

WATERFRONT TORONTO KEY OBJECTIVES

Priority Outcomes and "Must Do's" for the MIDP

- Job Creation
- Climate Positive
- Housing Affordability
- New Mobility
- Data Privacy & Digital Governance

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New Jobs and Economic Development

Growth on the Waterfront must support Toronto's need for continued economic success and growth in employment. Spaces that support this and catalysts that drive it are both needed.

Growing new and nascent Canadian industries

1



Tall Timber Industry

Bringing together and growing eco-systems

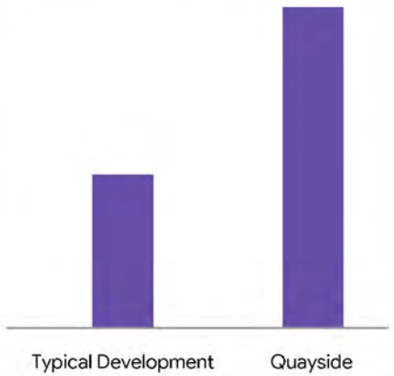
2



Urban Innovation Cluster

More non-residential uses

3



Non-residential Uses

New lower-floor typology for small businesses

4



"Stoa" Ground Floor

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75%-85% Reduction in GHG emissions

Sidewalk Labs will invest in a series of innovations that drastically reduce greenhouse gas (GHG) emissions below levels in comparable projects, enable smarter management of resources, and reduce the cost of future upgrade and maintenance.

Getting around with fewer emissions

1



Increased transit and active transportation rides

Clean energy and smart energy management

2  Thermal Grid

3  Advanced Power Grid

4 Building Construction meeting Toronto Green Standards - Tier 3

5  Building Equipment Schedulers

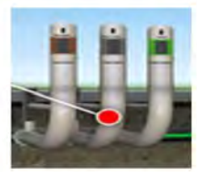
Creating greener buildings with new materials and methods

6



Sustainable Construction and Materials

Collecting and managing waste and water more effectively

7  Smart Waste Management

8  Active Water Management

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40% Below-Market Housing

The housing program mix at Quayside is specifically designed to address the housing gridlock facing the city today. It will provide options and opportunities to more Torontonians, enabling an inclusive complete community on the waterfront.

Exceed affordable targets and expand housing options

1. **20% affordable and 20% middle-income**
2. **50% purpose-built rental housing**
3. **New housing options,** including co-living, family housing, shared equity

Reduce construction costs with new technology and innovative design

4. 

Factory construction of buildings

5. 
Efficient Units

Design and provide services for all ages and abilities

6. 
Family-supportive design; options to age in place

7. 
Accessible Design

Dedicate spaces for community uses

8. Expanded All-Ages Public Realm

9. 

Social Infrastructure; Arts, Health, Education and Civic Engagement spaces

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Reducing Congestion & Improving Safety

Rapid urban growth is making it harder to get around, but support for transit and innovations in mobility management offer opportunities to help people and goods move easily.

Transit-priority and transit-first

1



LRT Expansion

Safer streets designed to evolve with emerging technologies

2



Adaptive Traffic Signals and Dynamic Curb Management

Multi-modal options that rival car ownership

3



Exceptional bike and pedestrian infrastructure

4

Mobility as a Shared Service

New last mile delivery system

5



Freight Consolidation Center

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Must Do - Data Privacy & Digital Governance

Toronto is rapidly becoming a major tech hub, and Canada's long-standing commitment to privacy and civic impact is the foundation upon which new innovation is developing.

Consistent with all Laws and Ethical Use of Technology

1

RDIA

Responsible Data Impact Assessment Process



Proposals that could inform a new global standard in data governance

2

Civic Data Trust



Publicly Accessible by Default and No Vendor Lock-In

3

Published Standards



Data security and privacy

4 No sharing personal data with third parties, including other Alphabet companies, unless with explicit consent

5 Data cannot be used for advertising purposes.

6 Privacy by Design embedded in all solutions

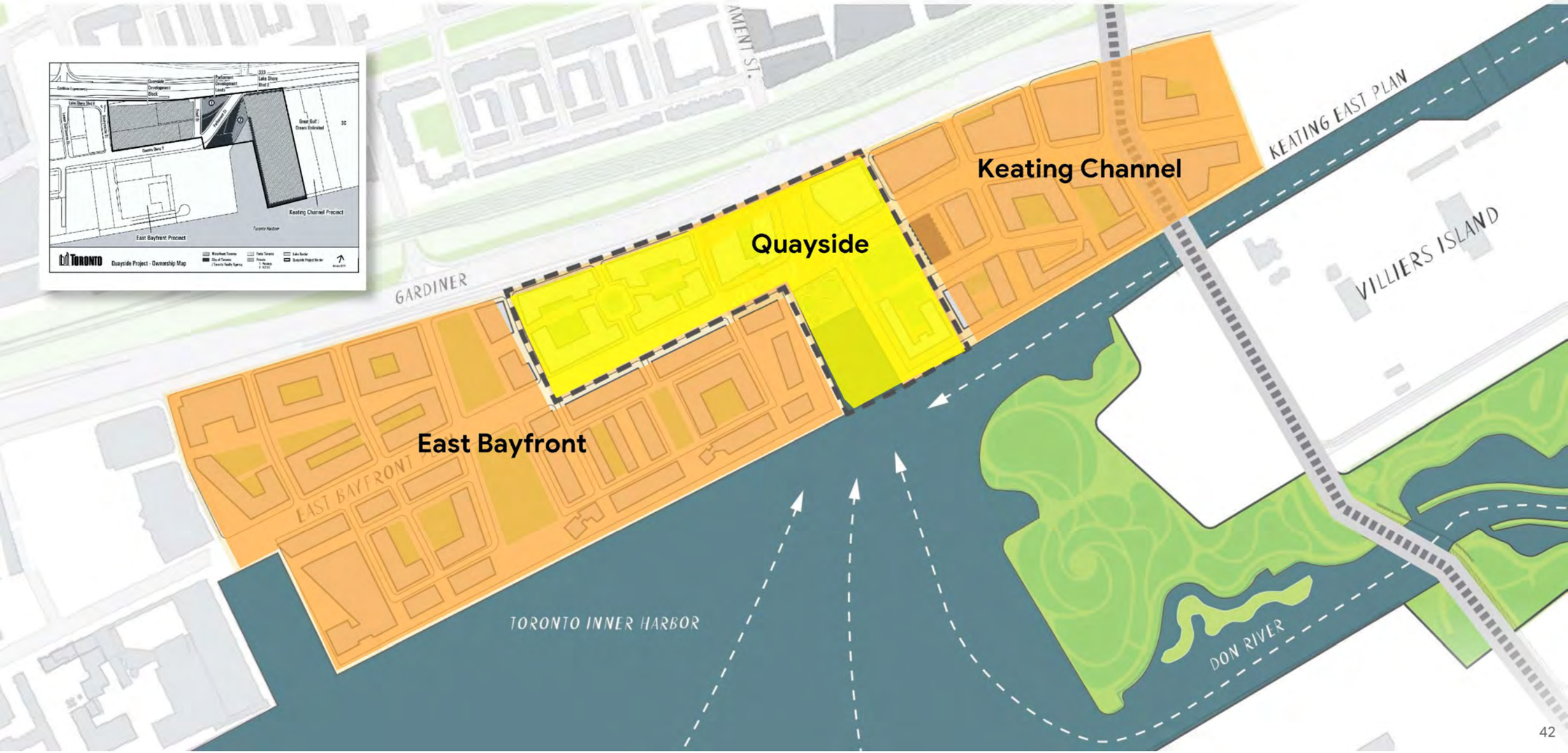
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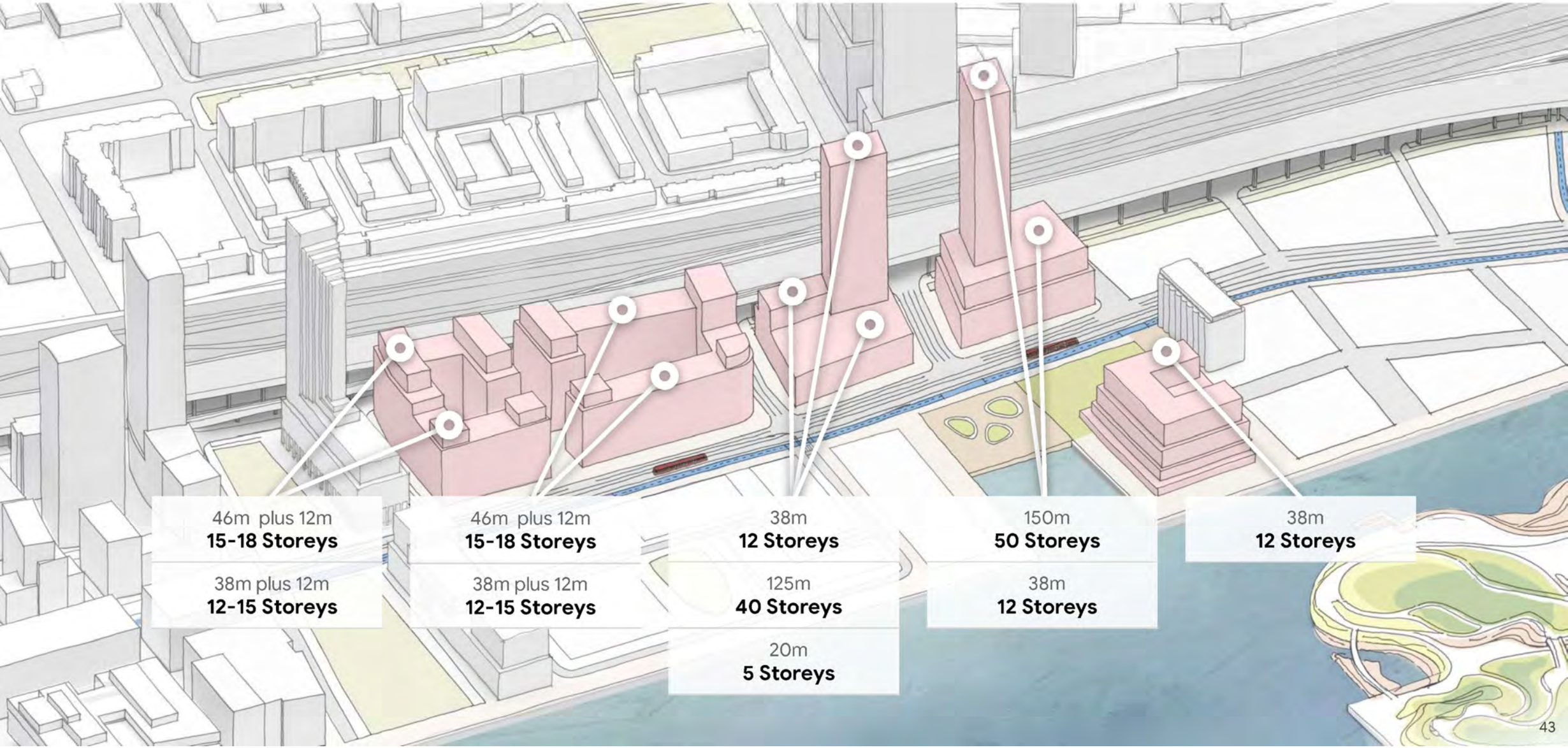
Quayside Precinct Plan Is Itself a Convergence

SIDEWALK TORONTO



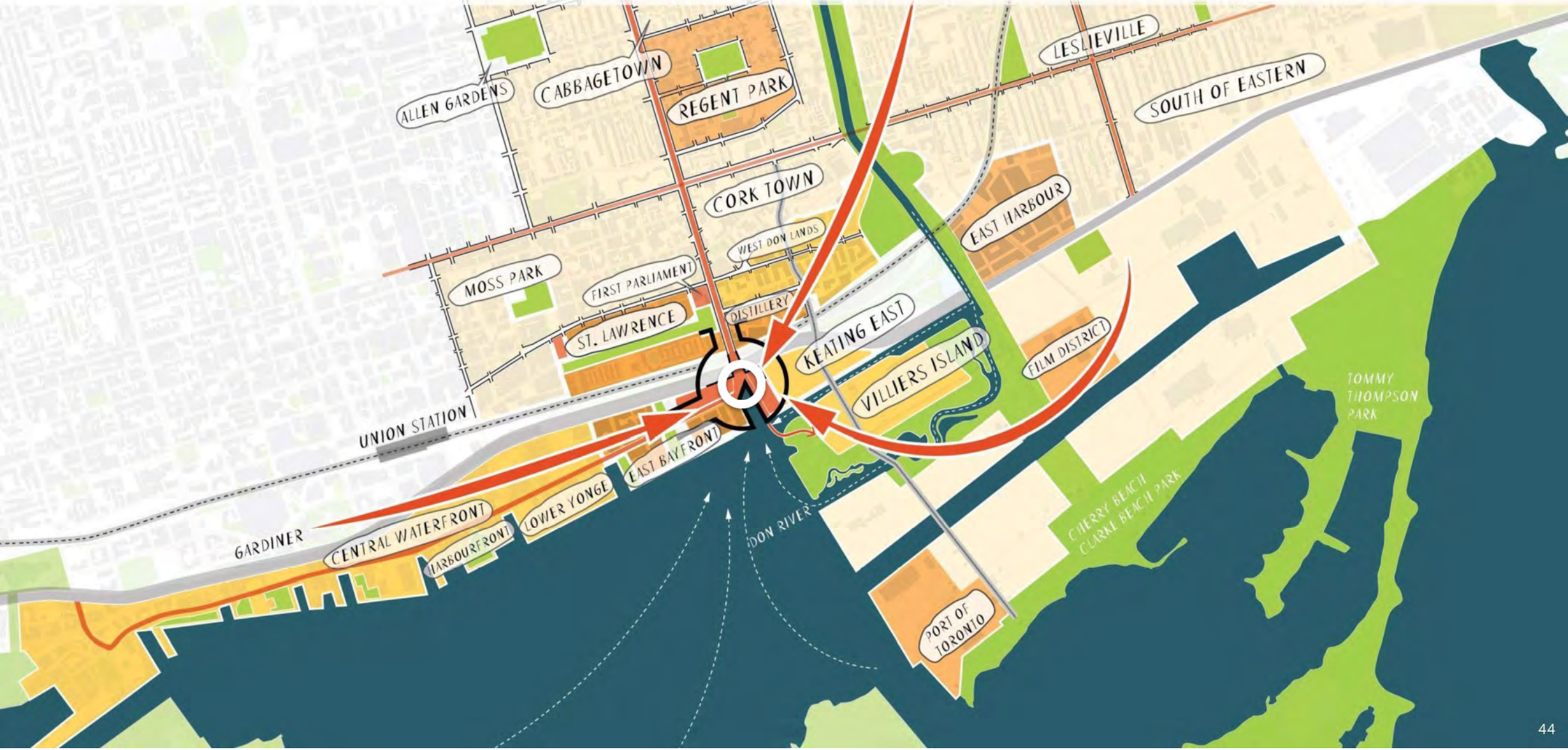
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Quayside: Current Zoning Permissions (Height + Massing)



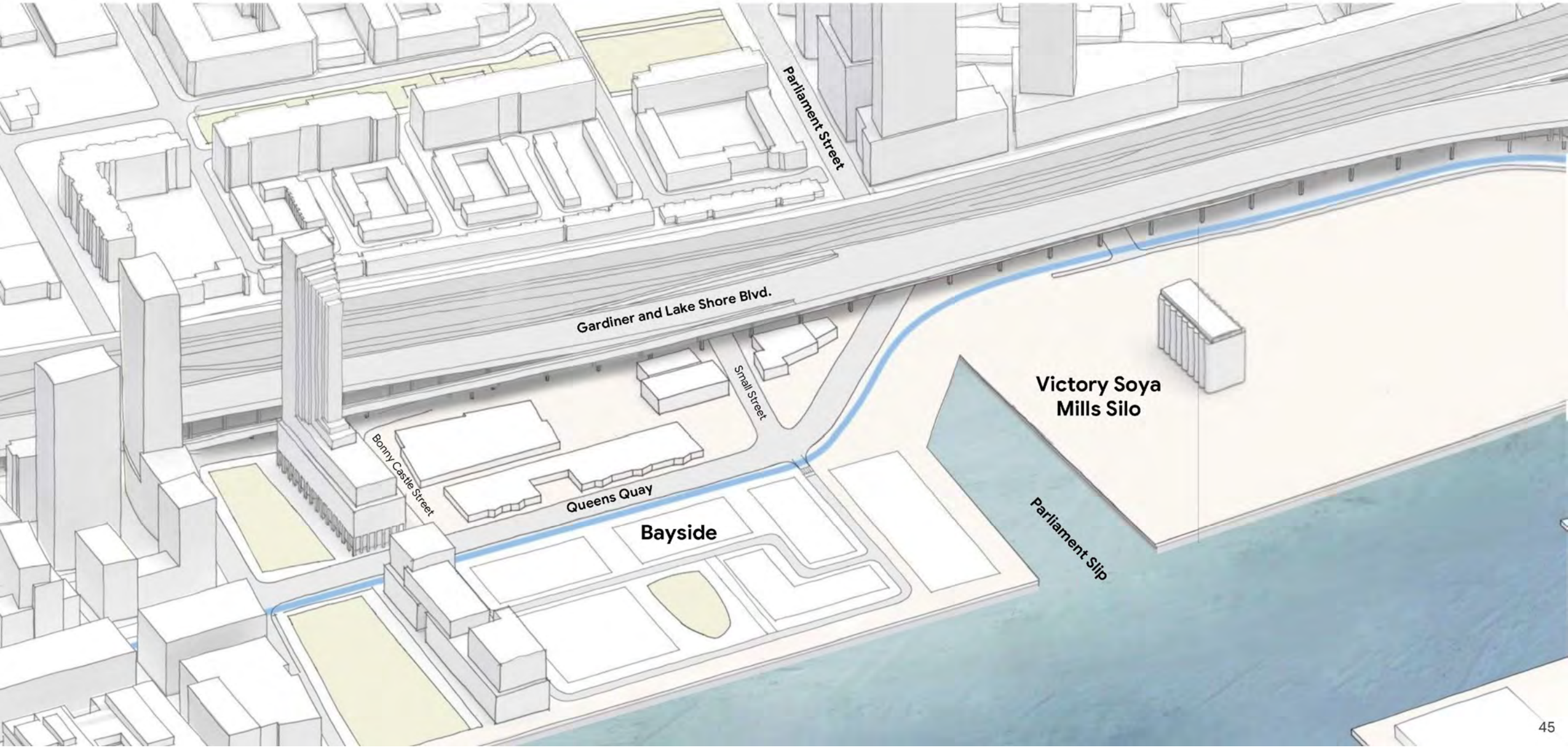
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Quayside among Toronto's Downtown and East Neighbourhoods



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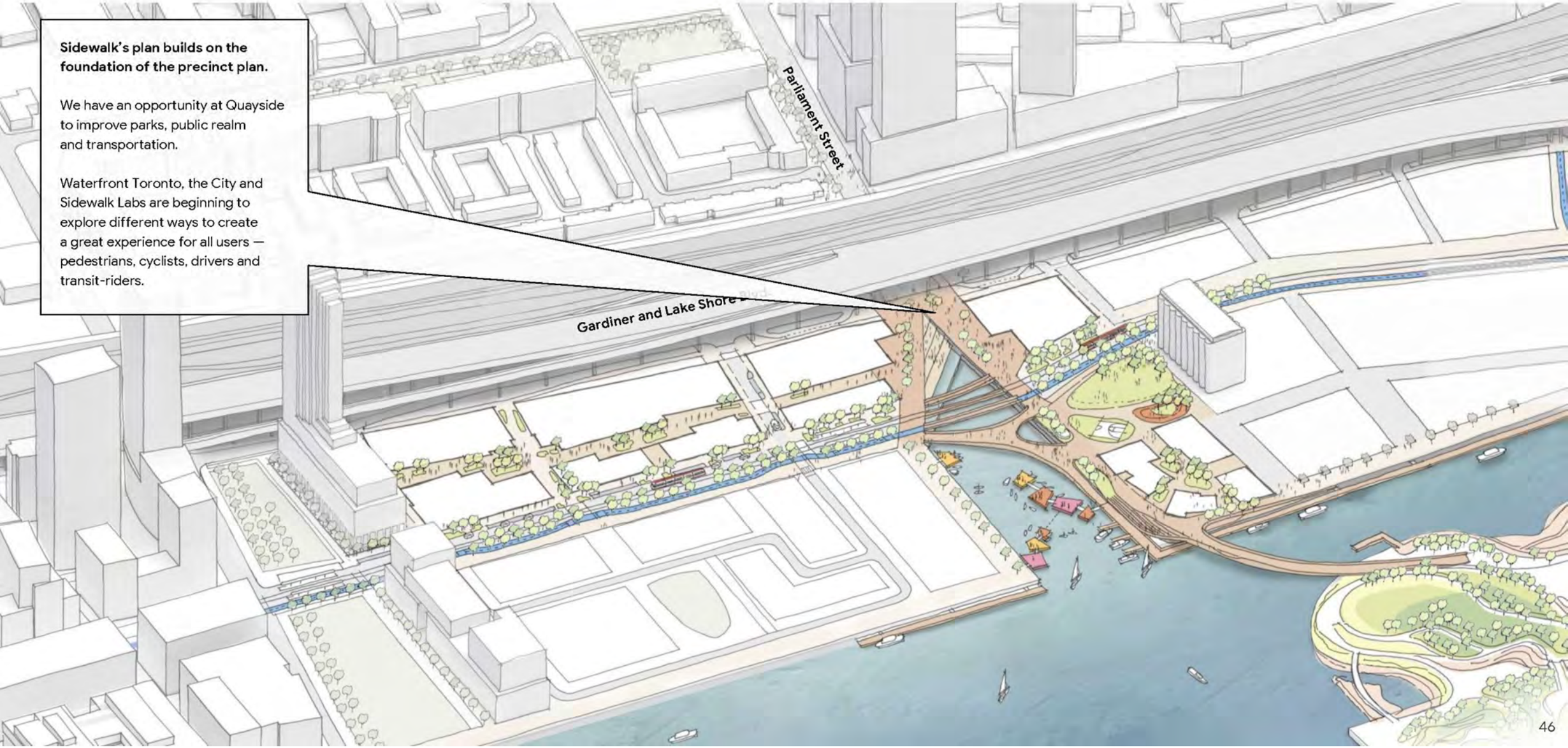
Quayside: Today



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Quayside: People-first Streets and Public Realm

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Sidewalk's plan builds on the foundation of the precinct plan.

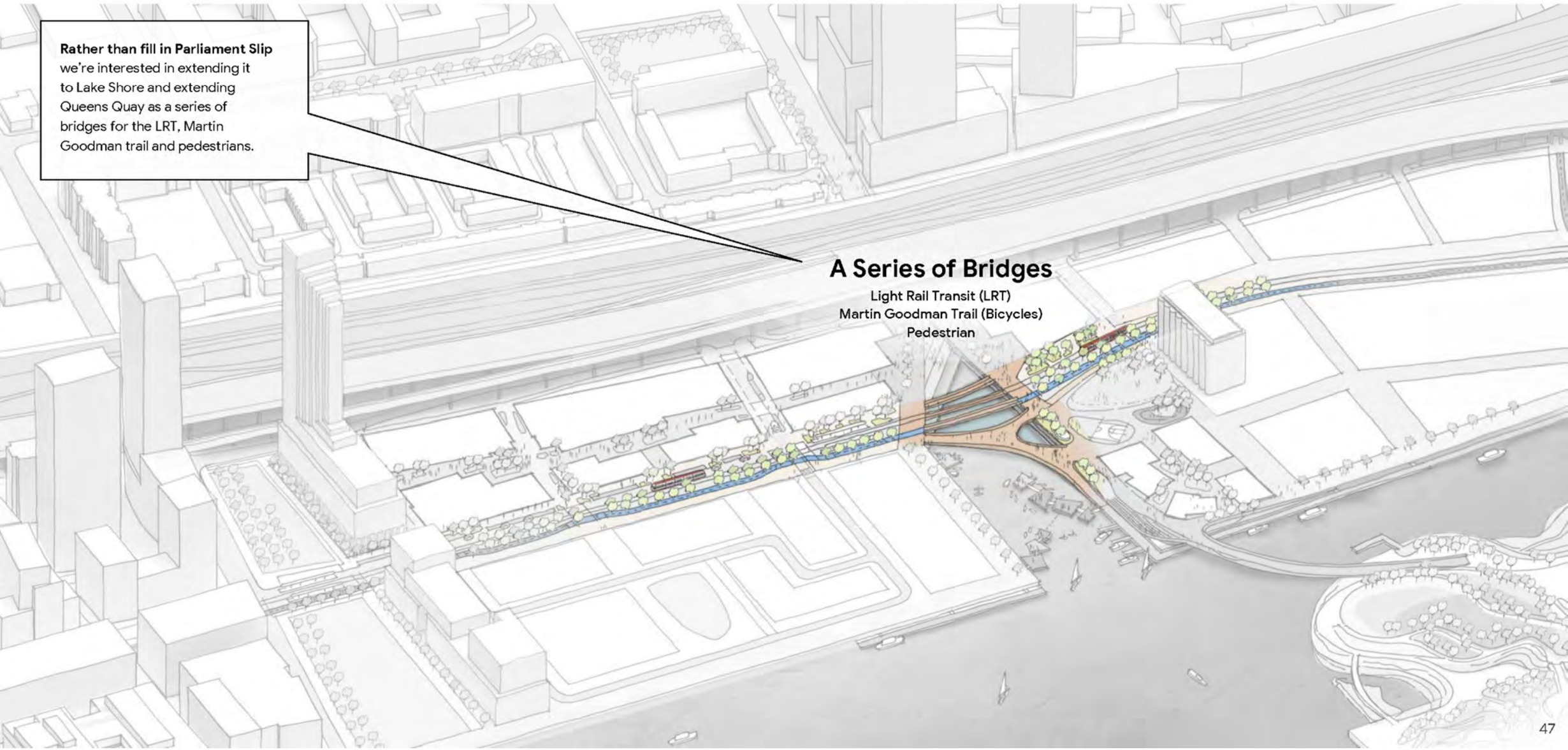
We have an opportunity at Quayside to improve parks, public realm and transportation.

Waterfront Toronto, the City and Sidewalk Labs are beginning to explore different ways to create a great experience for all users — pedestrians, cyclists, drivers and transit-riders.

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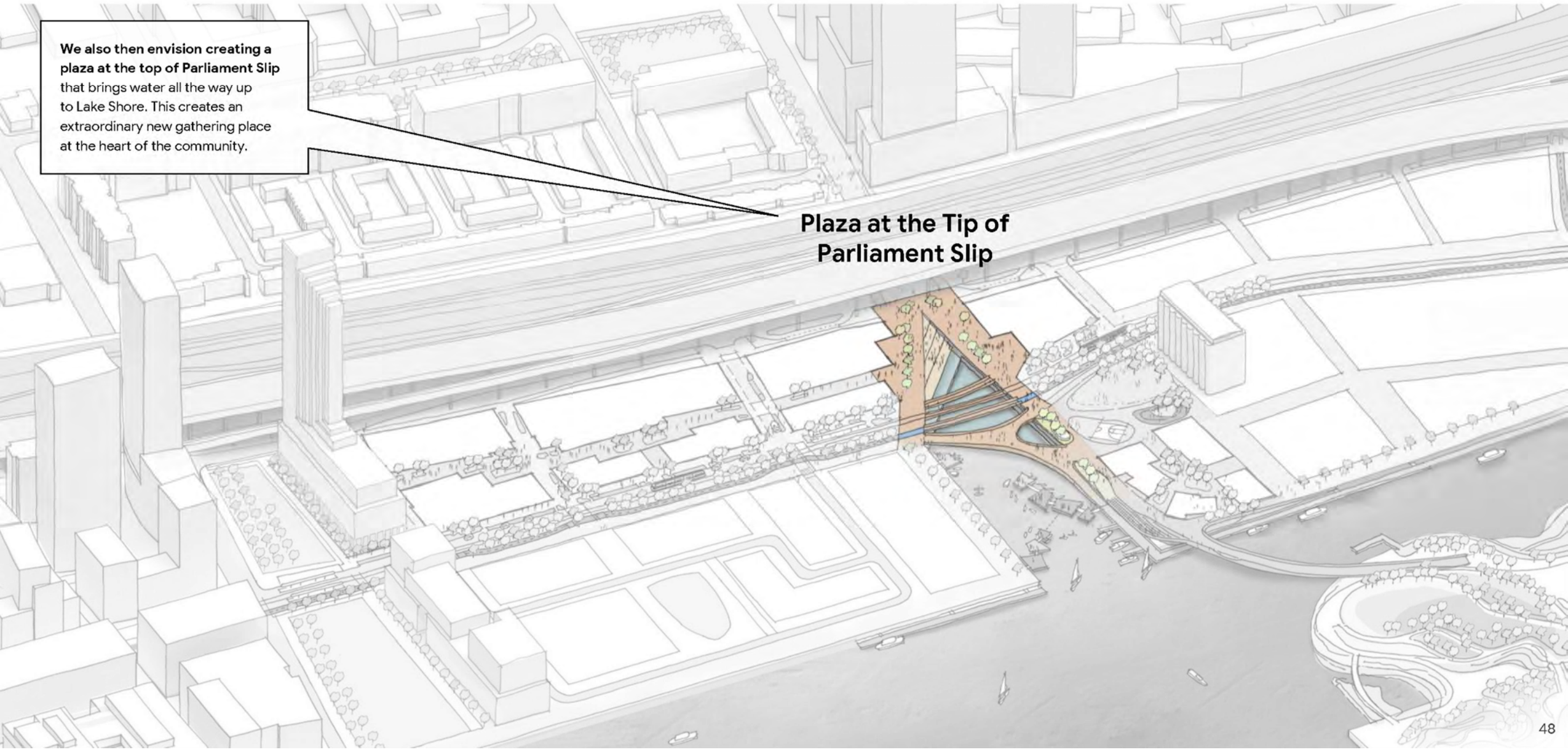
Quayside: People-first Streets and Public Realm

SIDEWALK TORONTO



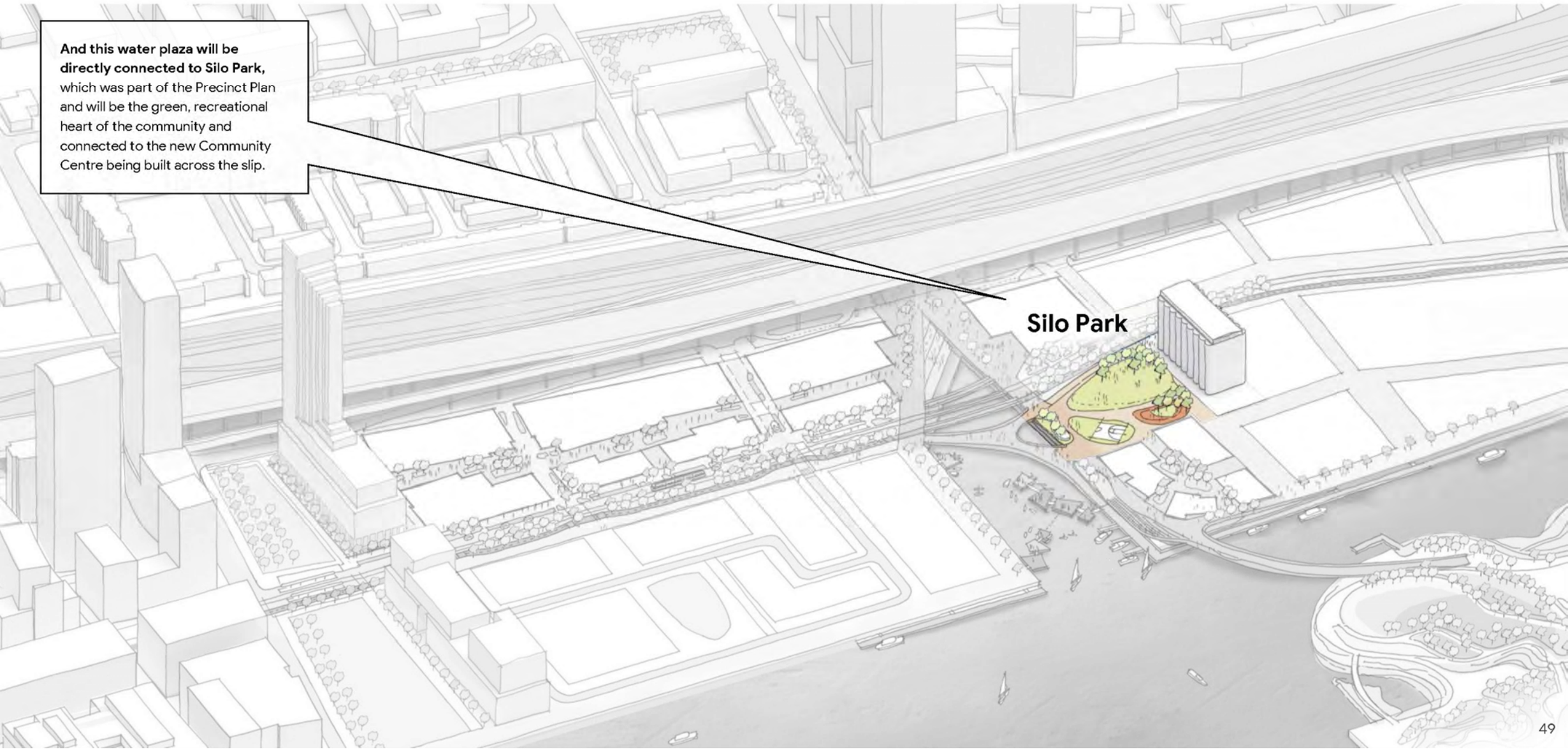
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Quayside: People-first Streets and Public Realm



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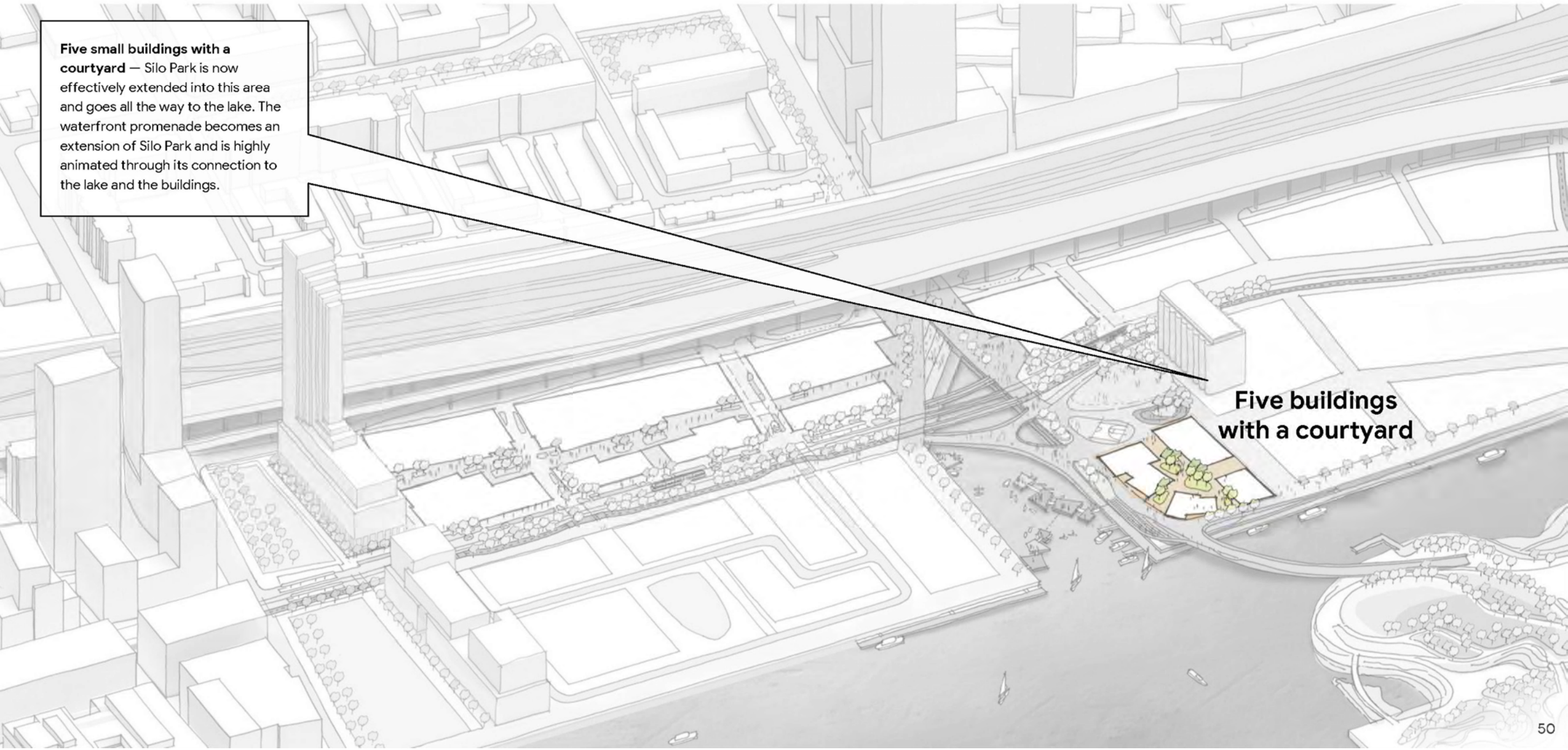
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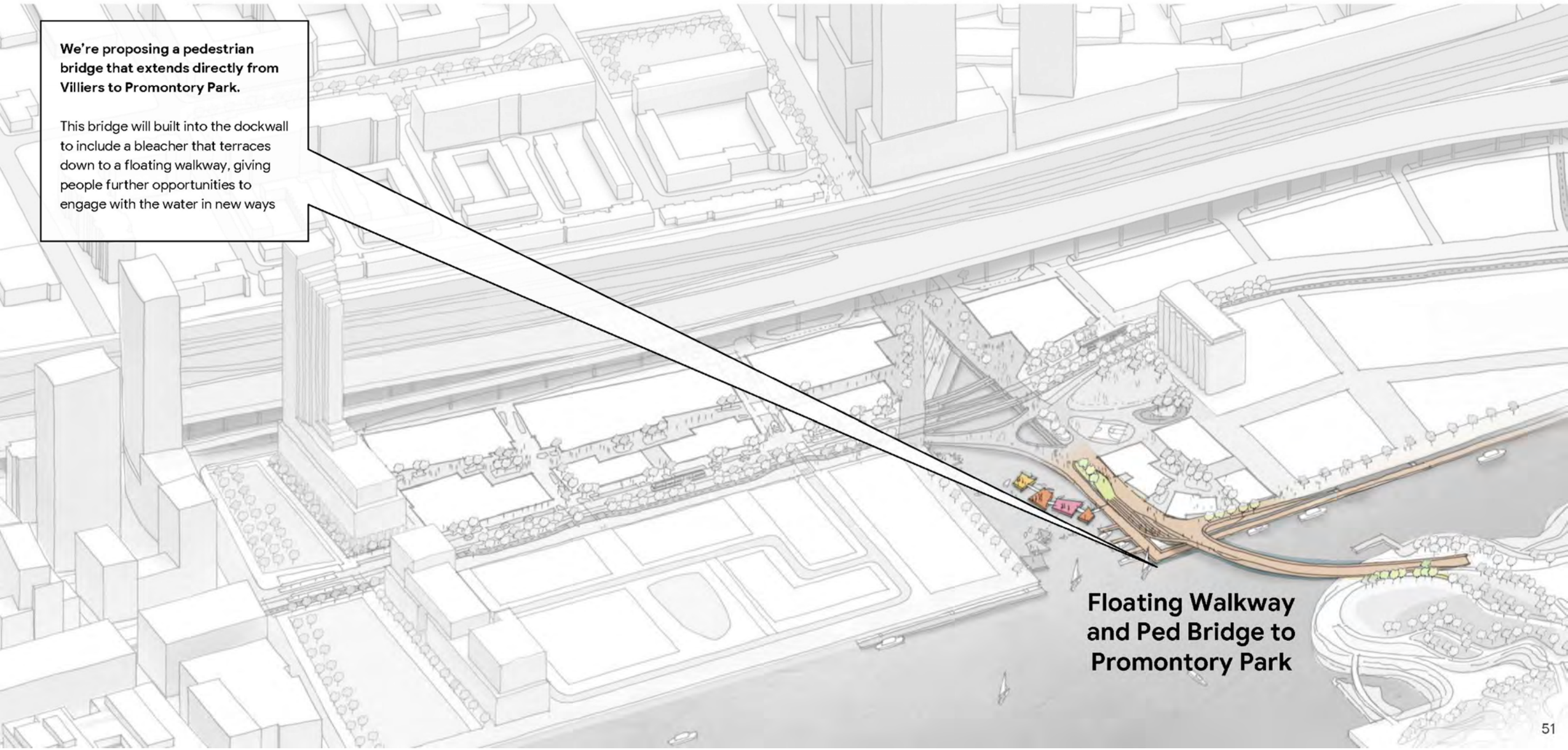
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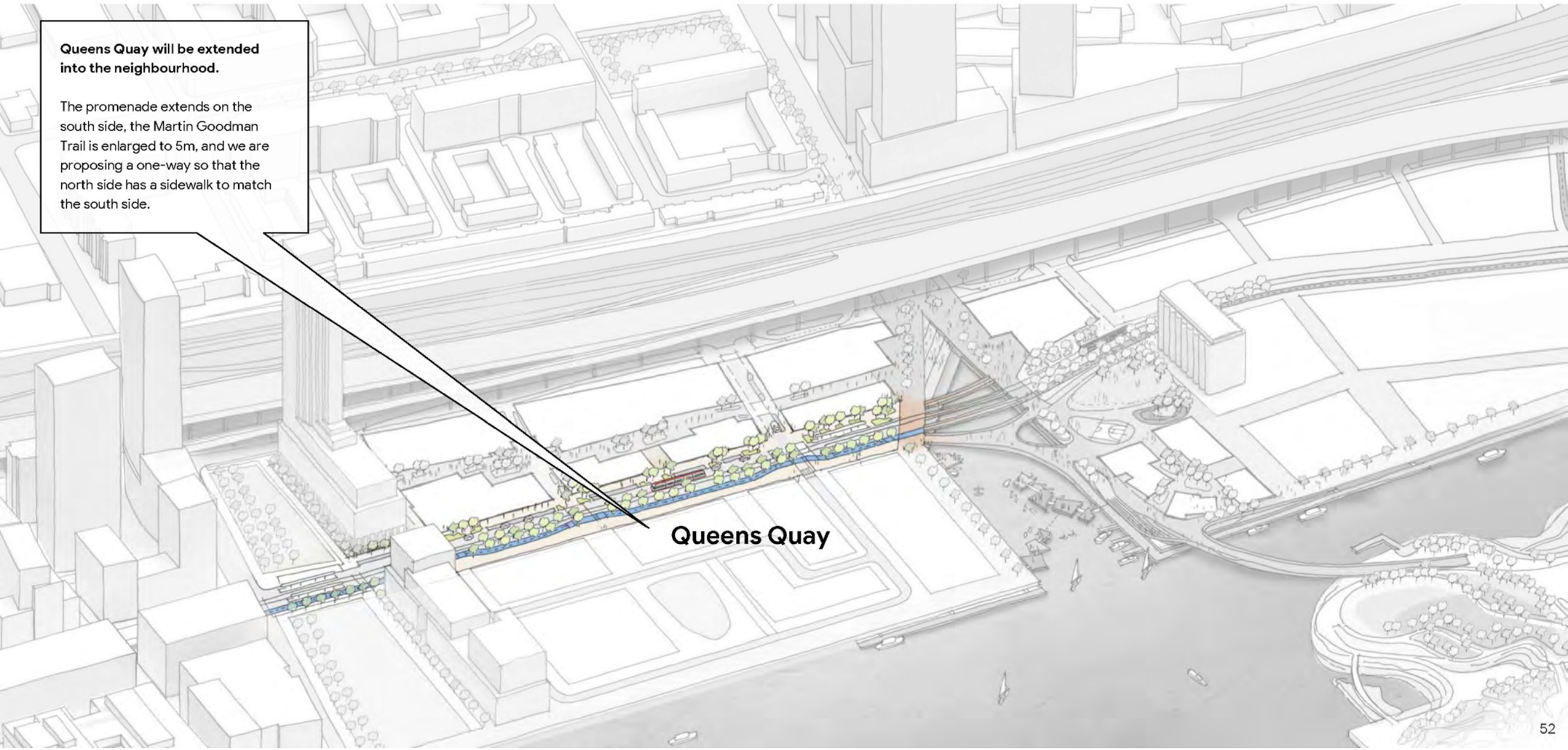
Quayside: People-first Streets and Public Realm

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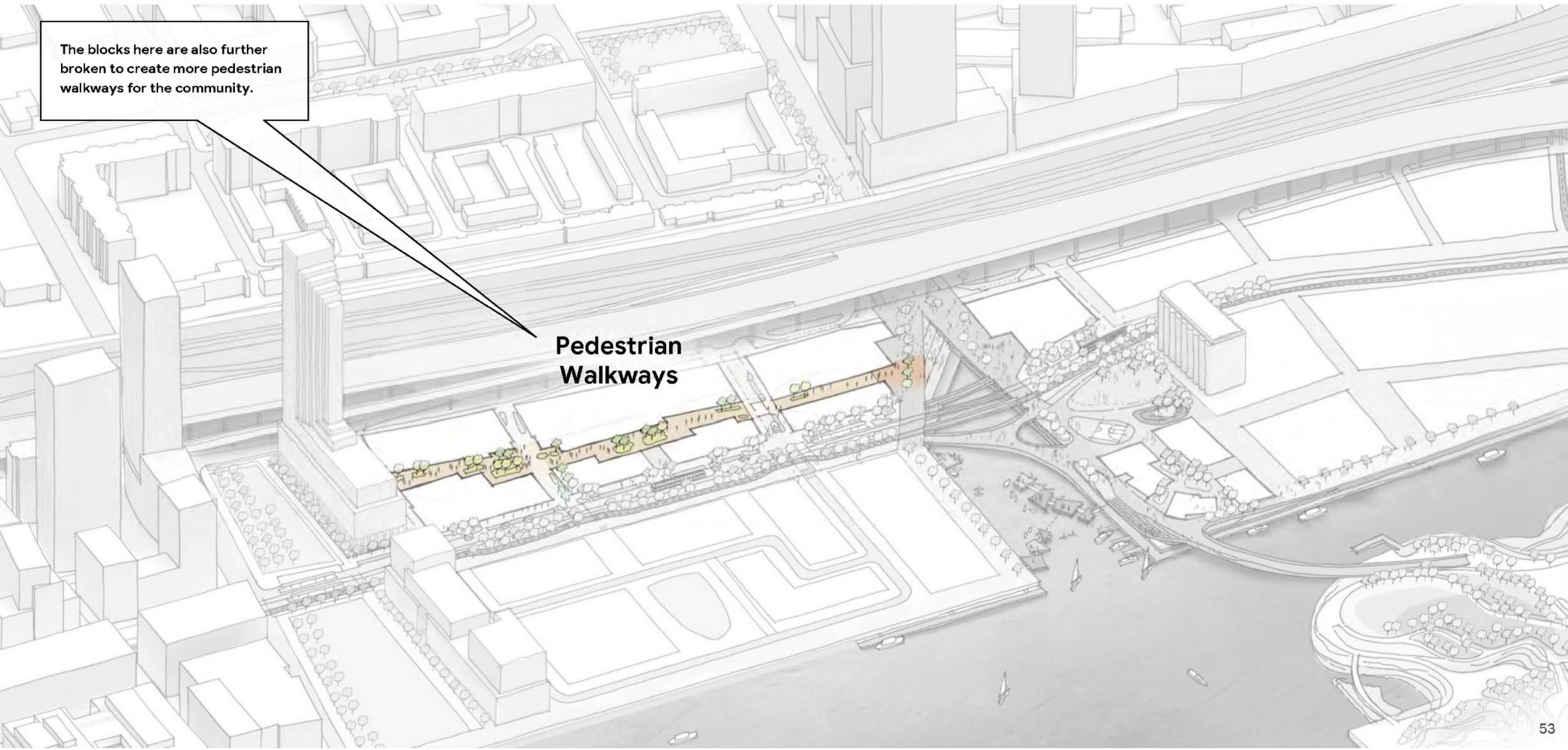
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Quayside: People-first Streets and Public Realm



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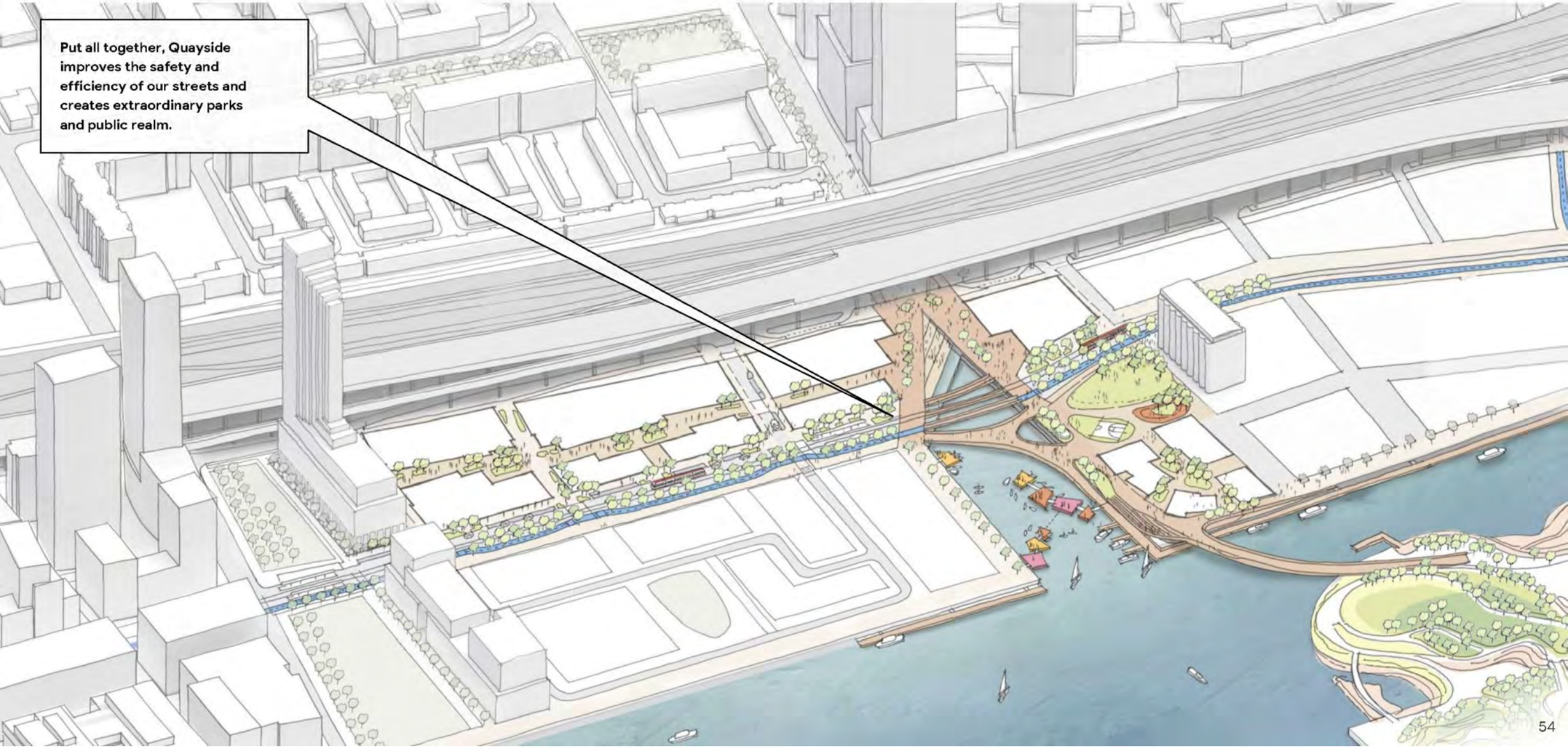
Quayside: People-first Streets and Public Realm



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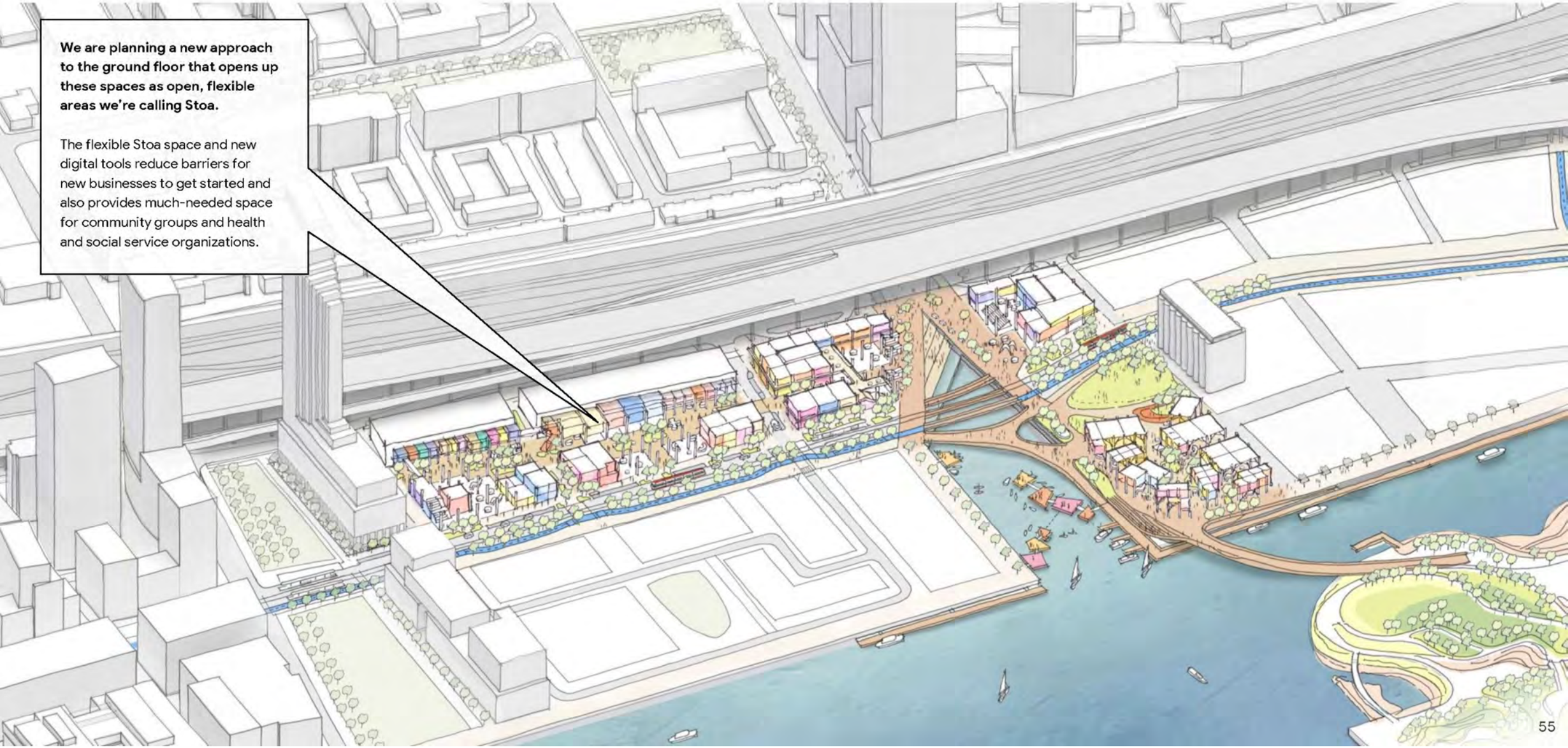
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Quayside: Animating Ground Floor Spaces

SIDEWALK TORONTO



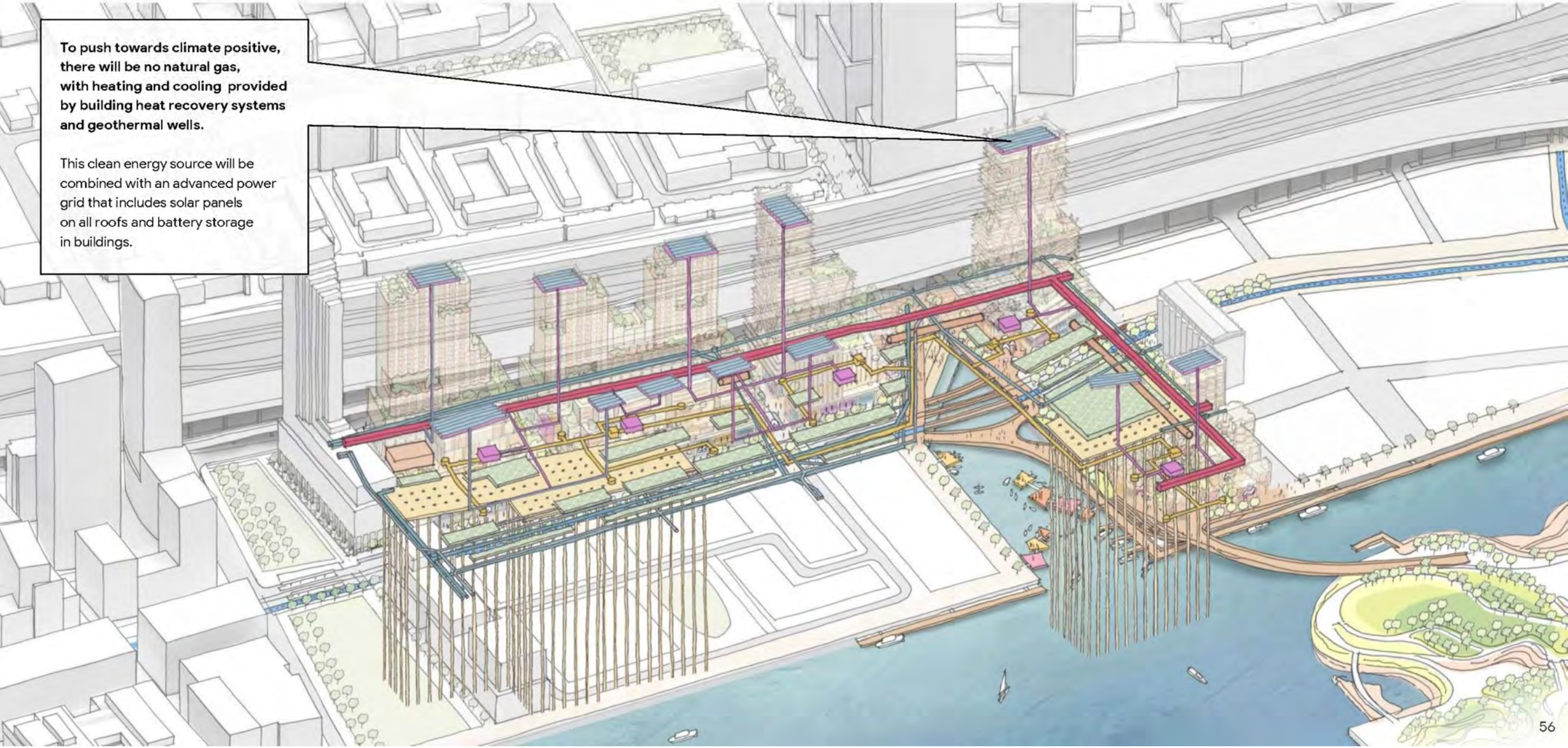
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Quayside: Providing Sustainable Infrastructure

SIDEWALK TORONTO

To push towards climate positive, there will be no natural gas, with heating and cooling provided by building heat recovery systems and geothermal wells.

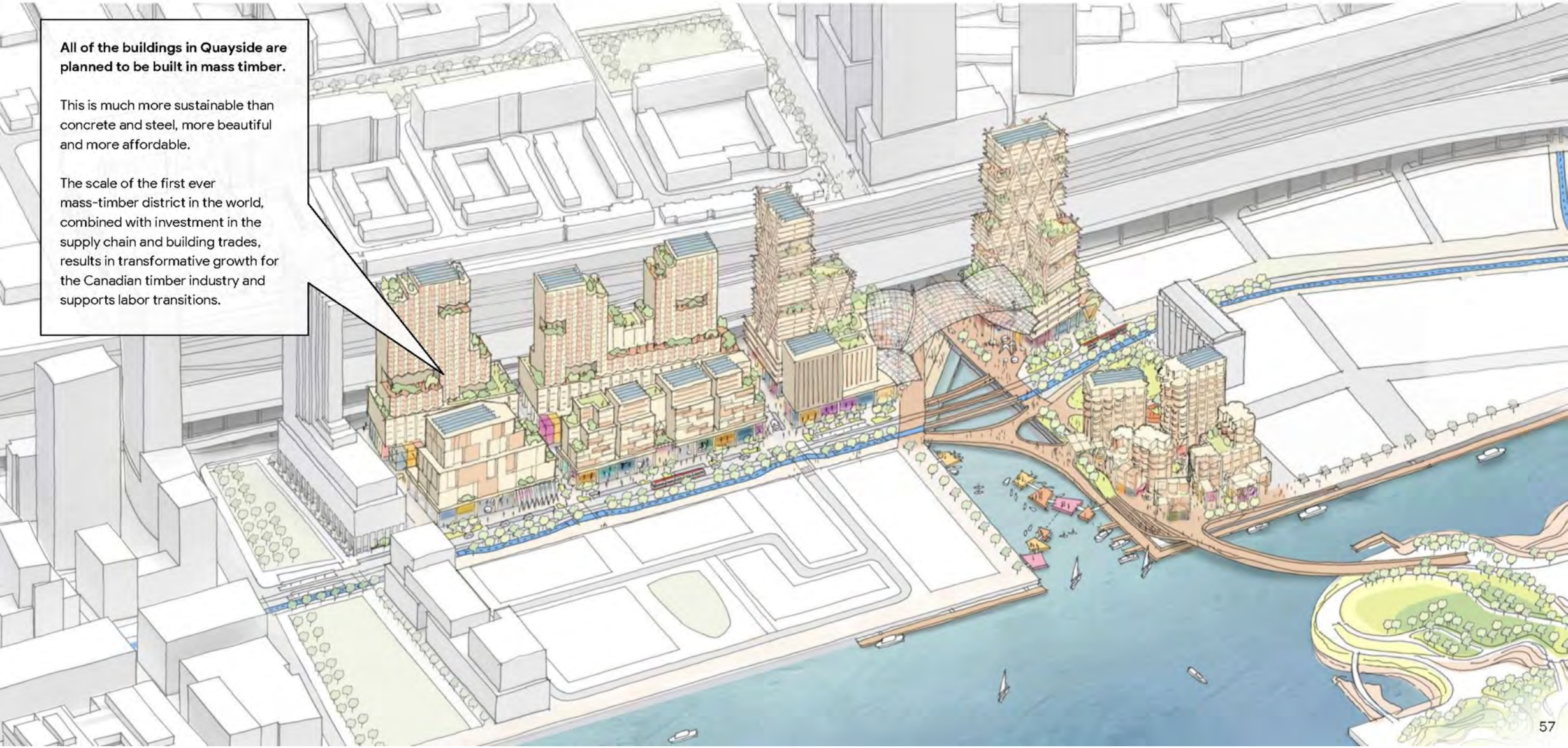
This clean energy source will be combined with an advanced power grid that includes solar panels on all roofs and battery storage in buildings.



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Quayside: Building Mass Timber

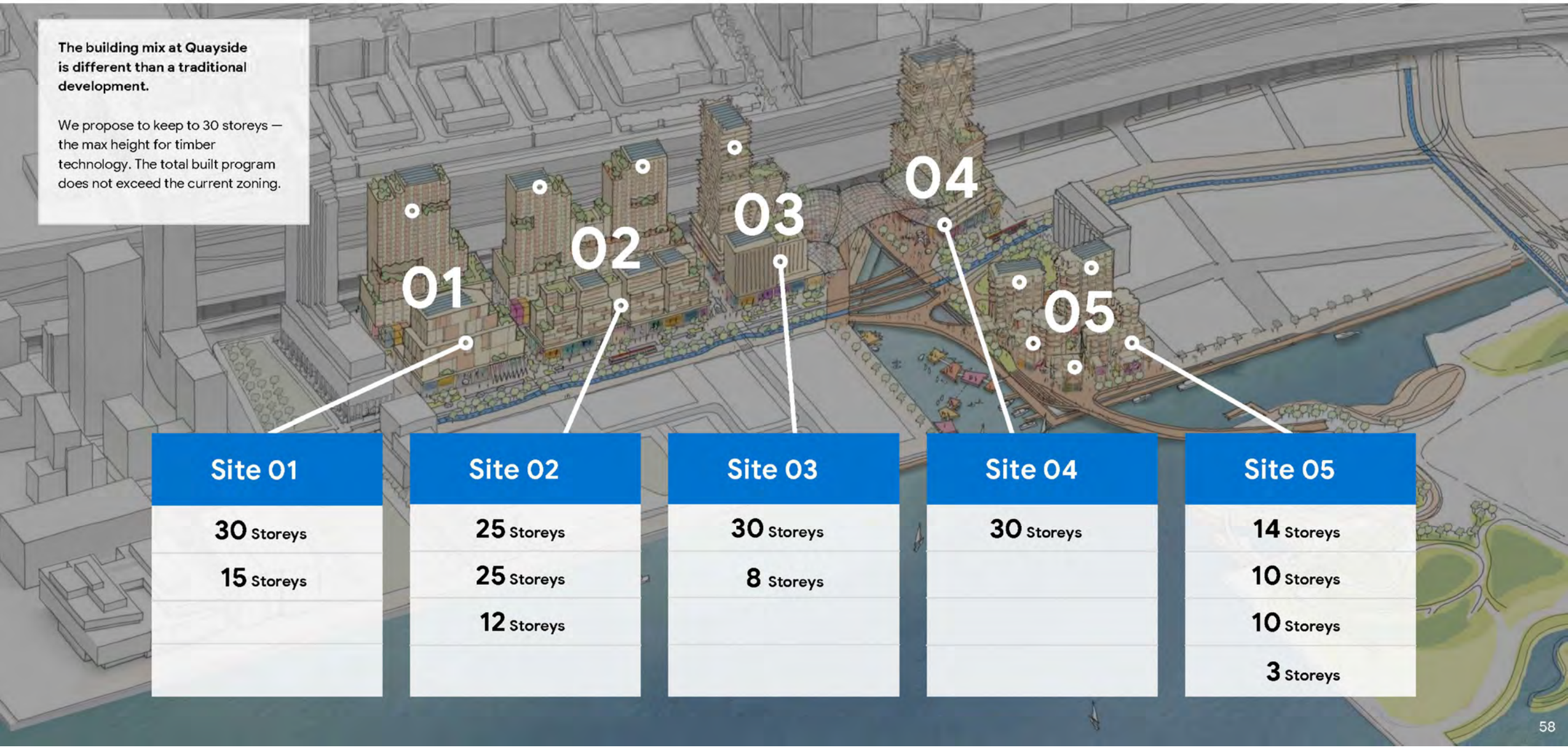
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Draft Quayside Plan: Proposed Program Density up to 3.3M SF

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Quayside Program: Proposed Program Density up to 3.3M SF

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Current Zoning*	Proposed Quayside Site Plan	Economic Development
93% Residential	**68%** Residential (11% Flexible Loft Space)	**9,000+** Construction jobs created in Ontario
20% Affordable Housing	**40%** Below-Market **20% Affordable Housing** (includes 5% deeply affordable) **20% Middle-Income Housing** (includes 5% shared equity)	**3,900** Jobs located at Quayside long-term
		• 3,400 Office Jobs
7% Commercial / Retail	**20%** Commercial (3% Flexible Loft Space)	• 275 Retail Jobs
	12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)	• 150 Production Jobs
3,100 Residential Units	**2,500** Residential Units (approx.)	• 75 Community Jobs
6,200 Residents	**5,000** Residents (approx.)	

* Rough estimates based on Zoning Maps

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Commitment to More Housing Options

SIDEWALK TORONTO

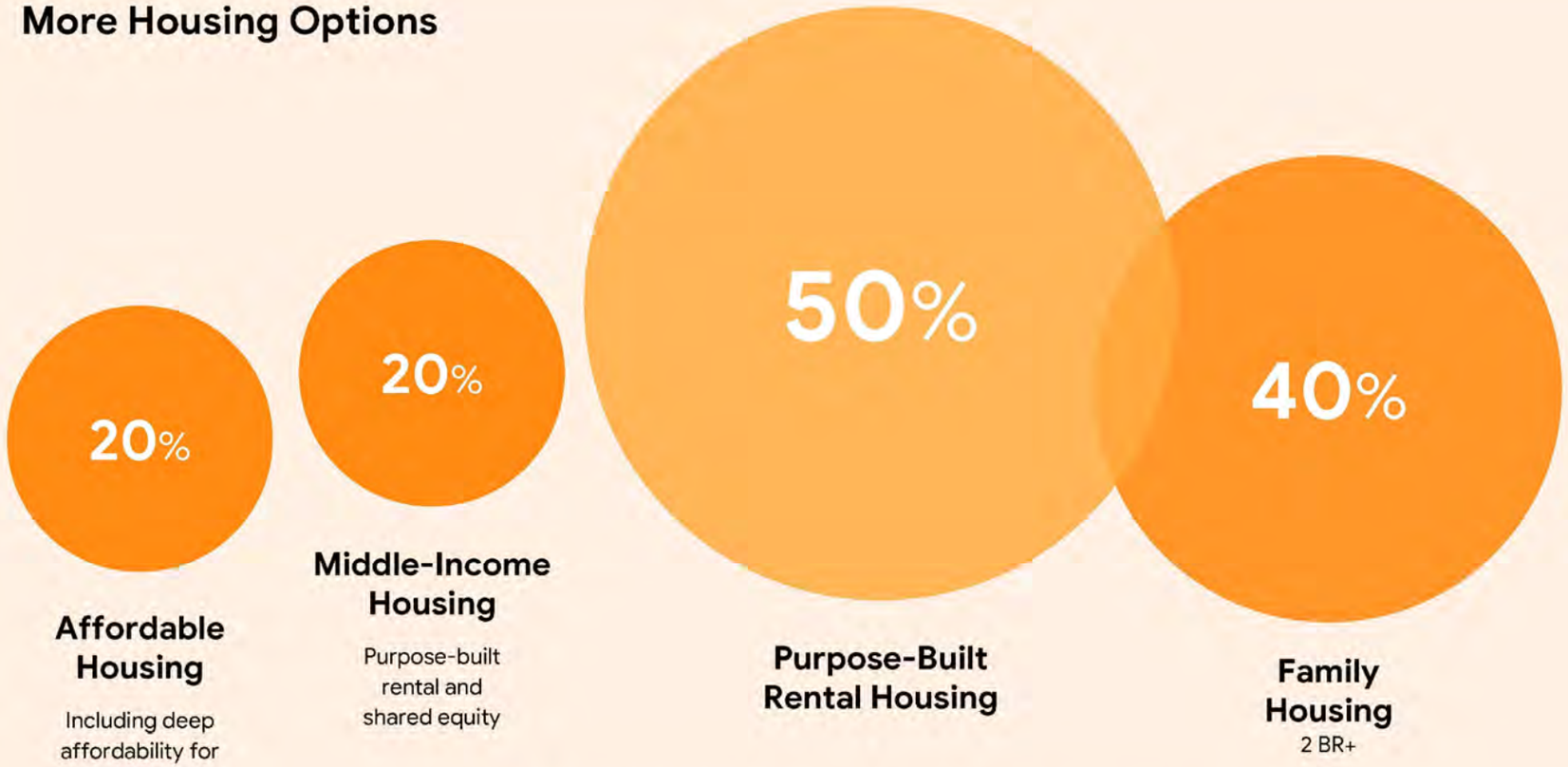
The Quayside affordable housing program mix will demonstrate a new approach and serve a much broader portion of the population.

More Affordability

40%

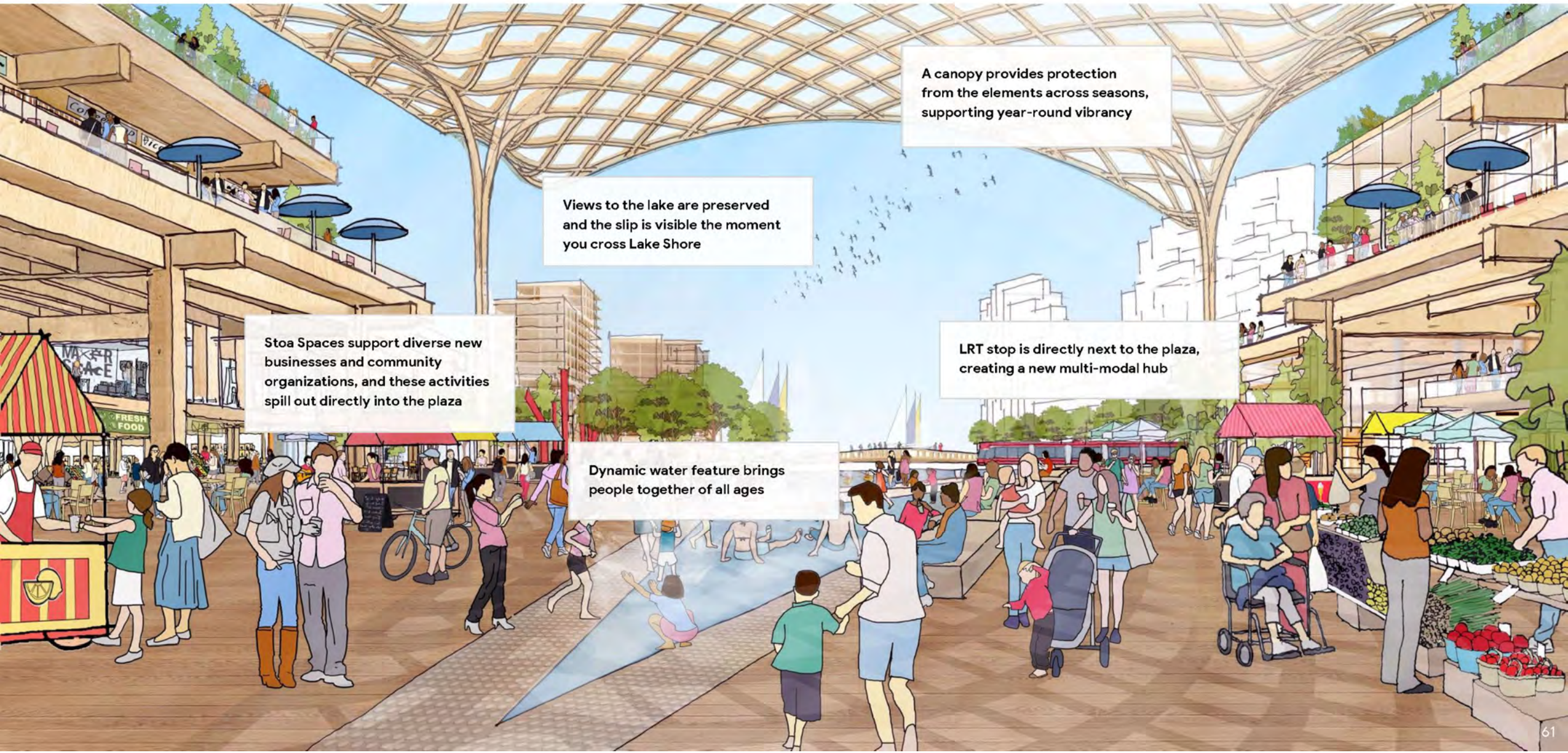
Below-Market Housing at Quayside

More Housing Options



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Parliament Plaza



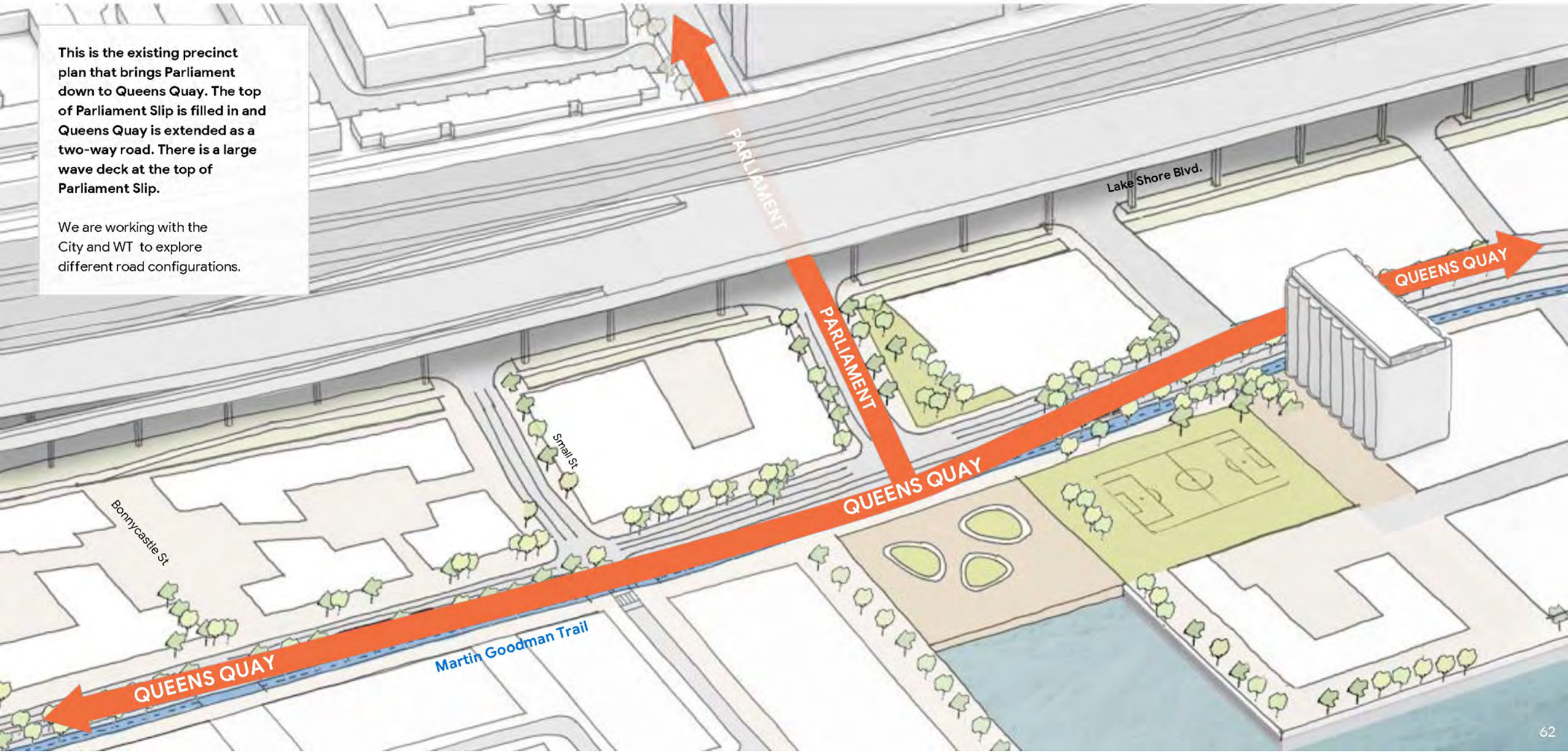
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Parliament & Queens Quay: Precinct Plan

SIDEWALK TORONTO

This is the existing precinct plan that brings Parliament down to Queens Quay. The top of Parliament Slip is filled in and Queens Quay is extended as a two-way road. There is a large wave deck at the top of Parliament Slip.

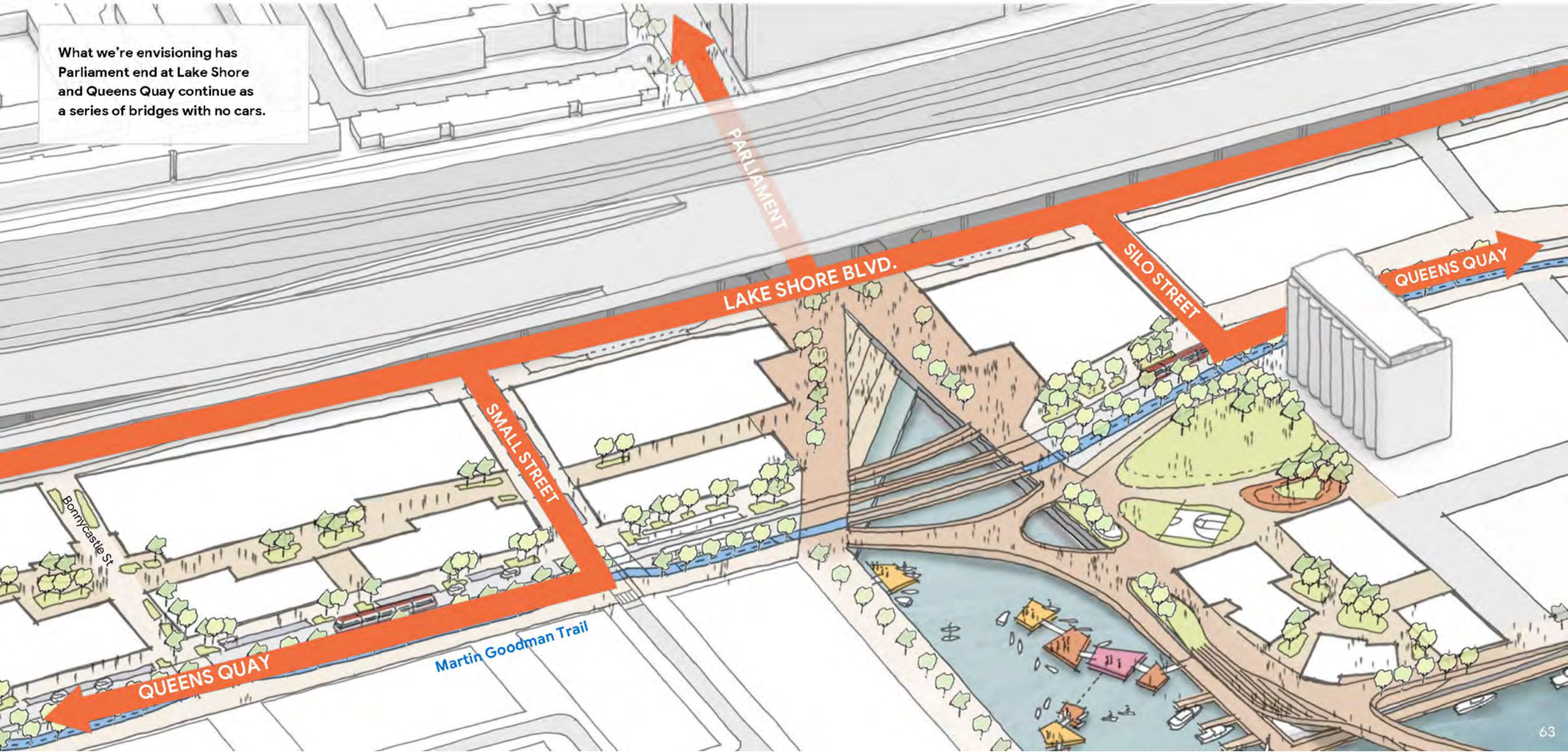
We are working with the City and WT to explore different road configurations.



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Exploration 1 – Parliament Plaza: No Vehicles in Parliament Plaza

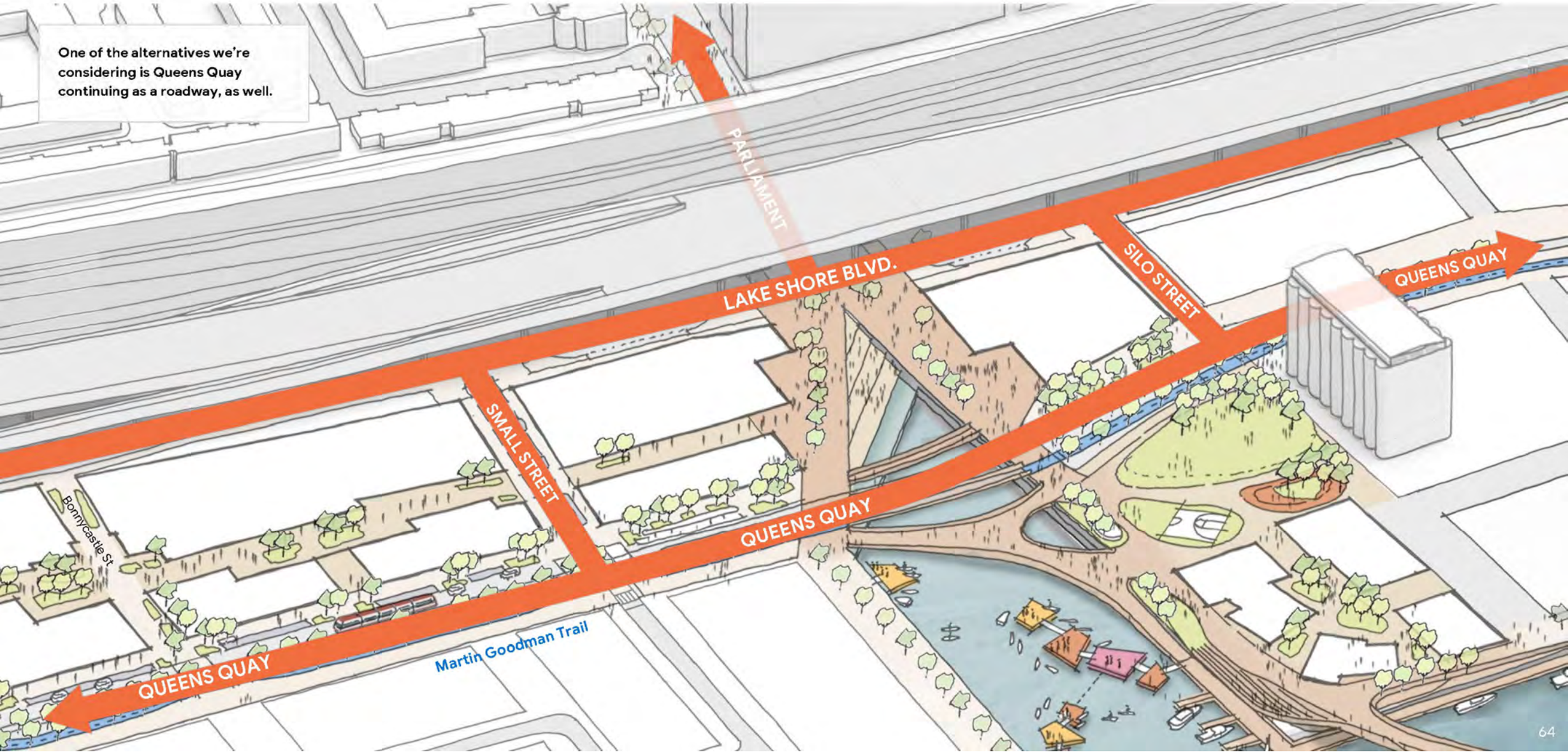
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Exploration 2 – Parliament Plaza: East ↔ West Vehicular Connection

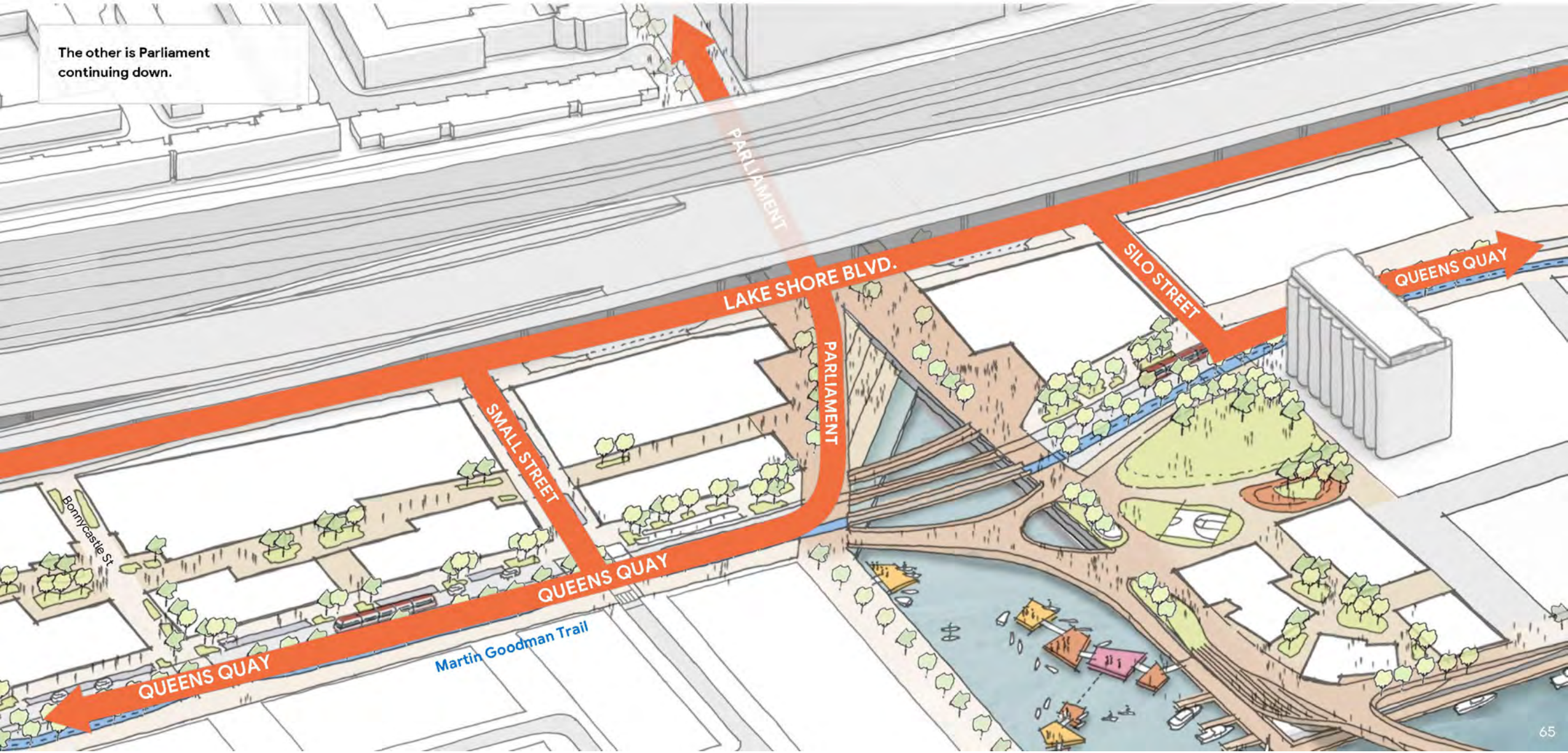
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Exploration 3 – Parliament Plaza: North ↕ South Vehicular Connection

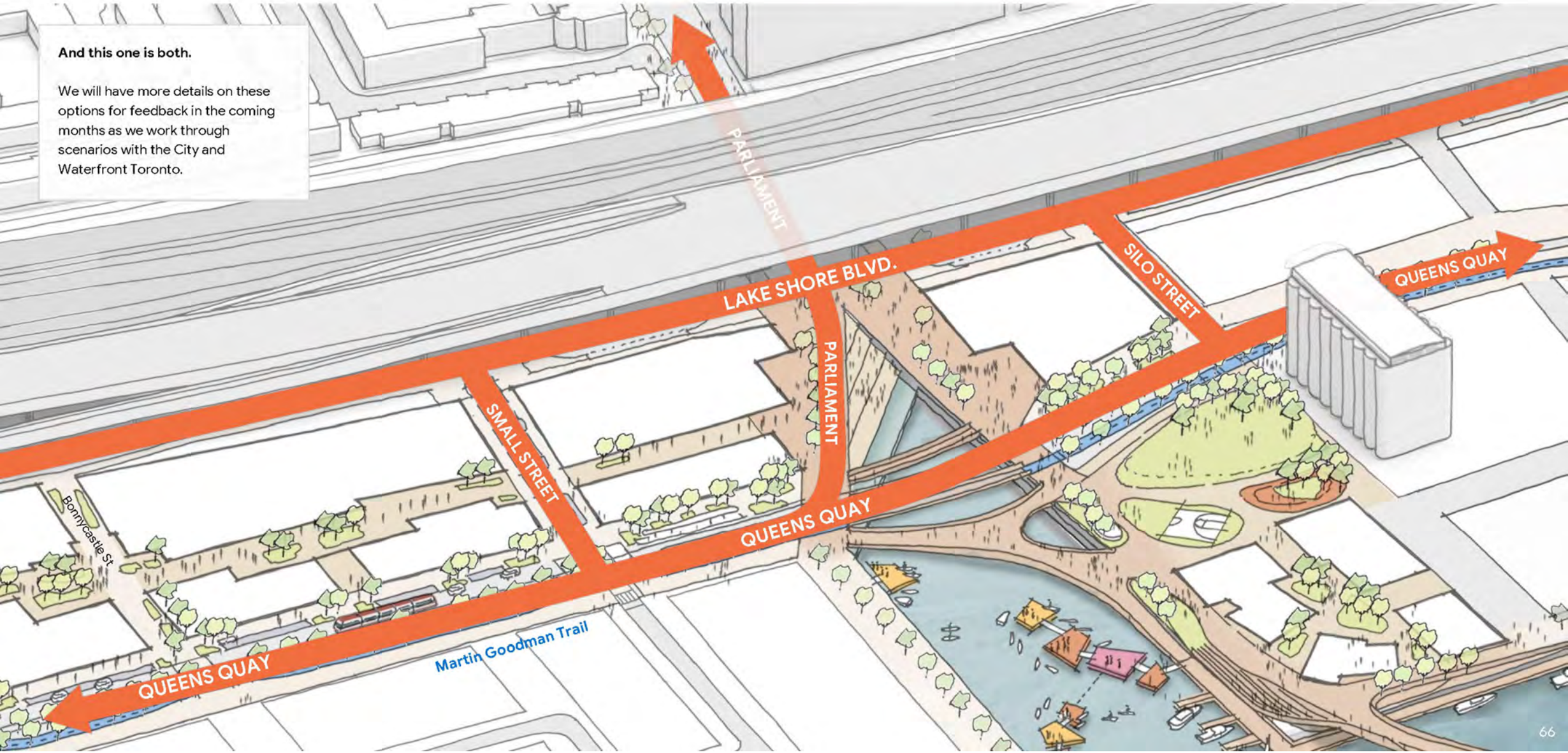
SIDEWALK TORONTO



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Exploration 4 – Parliament Plaza: N ↕ S and E ↔ W Vehicular Connections

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Queens Quay



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Pedway between Lake Shore Blvd East & Queens Quay



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Parliament Slip



This is now standing on the pedestrian bridge crossing Parliament Slip on the way to Villiers island.

You can see the promenade fully animated as a place to linger and play.

You can see the bridge ramping down to the floating walkway and series of floating islands. The shoreline is naturalized to support biodiversity.

This area is designed for real water activation, with kayakers. sail boats and marine transit.

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Draft Quayside Site Plan

Job Creation: 9,000+ Construction Jobs

Over 9,000 direct and indirect jobs will be created in Ontario as a result of the building construction at Quayside.

Job Creation: Canadian Mass Timber

Catalyzing the Canadian timber industry through an entire district built with mass timber, resulting in new jobs in Ontario and a reduction in the cost of construction.

Climate Positive: 75-85% Reduced Emissions

Targeting 75 - 85% reduction in greenhouse gas emissions at Quayside compared to typical development: from 6.3 tons CO_2 per Torontonian, to <1 ton per Quaysider.

Affordable Housing: 40% Below-Market

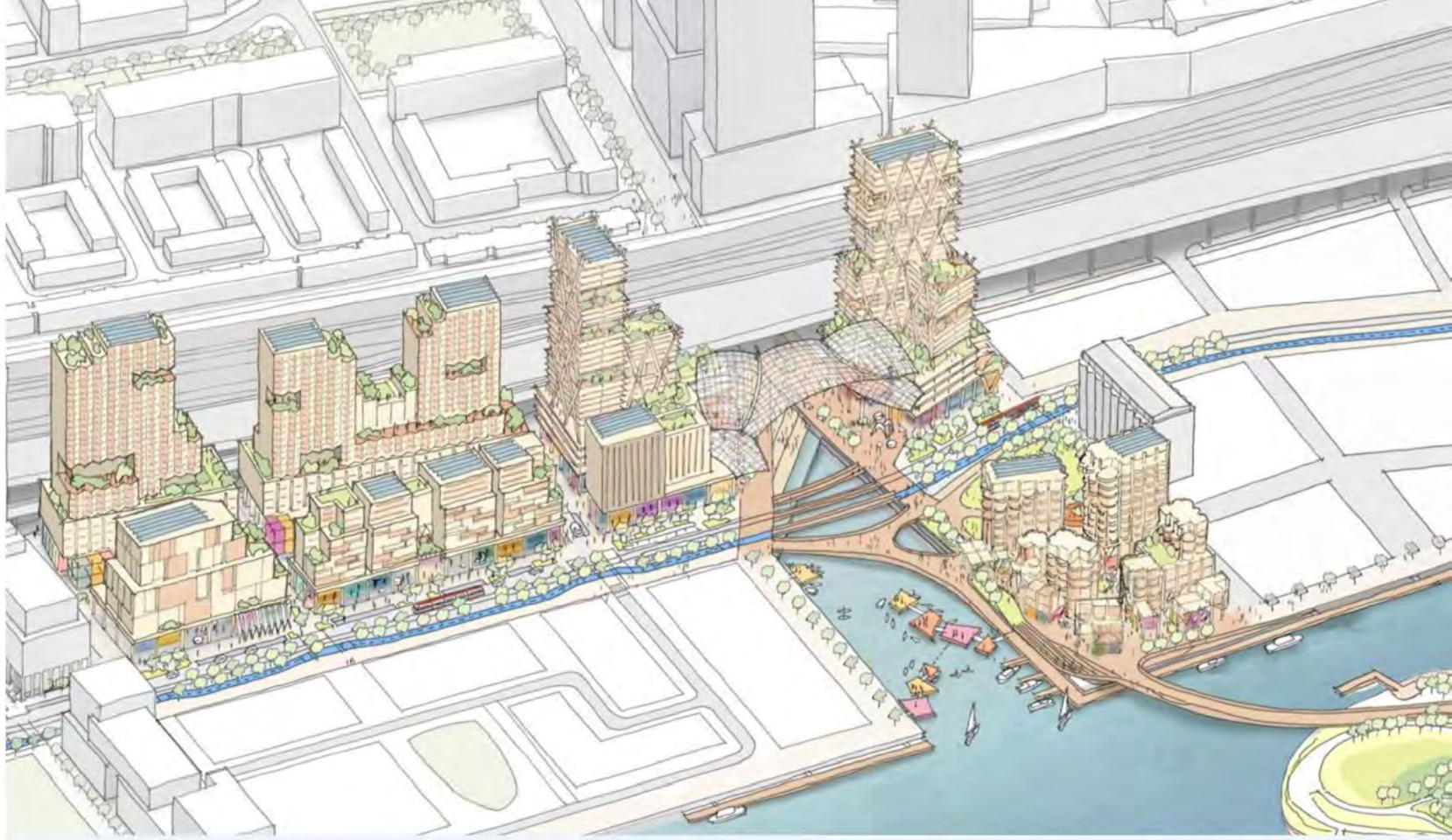
20% affordable housing, including 5% deep affordability, and 20% middle-income housing, including mid-range rental and shared equity.

New Mobility: Streets that Work

New mobility including support for the Light Rail Transit, a Vision Zero neighbourhood, and getting ready for an automated vehicle future.

Data Privacy & Digital Governance

Proposed Civic Data Trust as new 3rd-party public organization to manage all urban data, protect privacy, promote innovation, and safeguard the public interest.



Current Zoning*

- 93% Residential
- 20% Affordable Housing
- 7% Commercial / Retail
- 3,100 Residential Units
- 6,200 Residents

*Approx. based on zoning diagrams

Draft Quayside Site Plan

- 68% Residential (11% Flexible Loft Space)
- 40% Below Market
  - 20% Affordable Housing (includes 5% deeply affordable)
  - 20% Middle-Income Housing (includes 5% shared equity)
- 20% Commercial (3% Flexible Loft Space)
- 12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)
- 2,500 Residential Units
- 5,000 Residents (approx.)

Economic Development

- 9,000+ construction jobs created in Ontario
- 3,900 jobs located at Quayside long-term
  - 3,400 office jobs
  - 275 retail jobs
  - 150 production jobs
  - 75 community jobs

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GENERAL SESSION

Q&A

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Breakouts

WATERFRONToronto

A 50-minute exploration of the following topics as it relates to the draft Quayside site plan.

1. **Quayside Site Plan & Transportation**
2. **Social Infrastructure / Housing Affordability**
3. **Digital Governance**
4. **Sustainability**

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Infrastructure Canada

PROTECTED B

SCENARIO NOTE TO THE DEPUTY MINISTER

Quayside Steering Committee Meeting

MEETING DETAILS

- **DATE/TIME**: April 20, 2018
- **LOCATION**: Teleconference [redacted]
- **PARTICIPANTS**:
  - Kelly Gillis
  - Glenn Campbell
  - Gerard Peets
  - Brook Simpson

ISSUE

- This is the first meeting of the Quayside Executive Steering Committee, struck to serve as a governance mechanism for the Quayside project. The committee involves representatives from the three levels of government (departmental and political), Waterfront Toronto and Sidewalk Labs.

[redacted]

HIGHLIGHTS/KEY CONSIDERATIONS

[redacted]

- **There is a niche for this forum as a venue for information sharing.** We clearly have an interest in staying current on the issues that are being dealt with by Waterfront Toronto and Sidewalk. The forum can serve this purpose. We can also share insight on the federal context to assist Waterfront in charting a course that is sensitive to our interests. [redacted]

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[redacted]

- **To move the discussion forward, you could choose to:**

  — Summarize how you see this forum fitting in (a venue for Toronto Waterfront and Sidewalk to keep Governments up to date, [redacted]

  — Emphasize the value of getting together regularly to share information on this initiative, including as a means of identifying specific obstacles to advancing the project that may arise down the road.

[redacted] You can name Gerard Peets as a contact for INFC.

KEY BACKGROUND

- At issue currently in the negotiations between Waterfront Toronto and Sidewalk is the content of a Master Development and Implementation Plan. [redacted]
- Meeting material is provided in Annexes:

  — The meeting agenda;

  — The draft terms of reference for this committee, membership chard, organizational chart and memo on project governance;

  — A deck on the scope of the Master Development Implementation Plan;

  — An update on the Plan Development Agreement; and

  — A public engagement plan for Quayside.

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POINTS TO REGISTER

- This forum is a useful venue for Infrastructure Canada to stay up to date on the progress of the Quayside initiative. We can prepare for and coordinate sharing of information among other federal agencies that also have an interest.

- We understand the desire to ensure good oversight and management of the Quayside project. But good governance is about ensuring the right people are working together on the right issues, where accountability is aligned with the right parties.

[redacted]

- There is tremendous value in getting together regularly to share information on this initiative. Down the road, I can foresee using this forum as a means of identifying, reviewing and dealing with obstacles to advancing the project, as they arise, in each of our areas of responsibility.

[redacted]

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WATERFRONTtoronto

ANNEX A

Quayside Executive Steering Committee (QESC)
20 Bay St. Suite 1310
April 20, 2018
3:30 PM – 5:00 PM

1. Introductions/Welcome

2. Governance

   i. Memo – Quayside Project Governance
   ii. Approval of Terms of Reference
   iii. Committee Membership

3. Quayside Planned Development Agreement Update Memo

4. Update Presentation - Master Innovation and Development Plan (MIDIP) Scope

5. Public Engagement Update

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ANNEX B

Terms of Reference
Draft

Quayside Executive Steering Committee (QESC)
Toronto Waterfront Revitalization Initiative

Background:

As approved in the 2017-18 Corporate Plan, Waterfront Toronto issued a competitive Request for Proposals for an Innovation and Funding Partner to help create and fund a plan for a globally-significant community. This project is intended as a testbed -- engaging citizens, civic, academic and Canadian business organizations -- to showcase advanced technologies, building materials, sustainable practices, and innovative business/funding models than can achieve a healthy, diverse and climate positive urban development.

Sidewalk Labs was chosen as the successful proponent as Waterfront Toronto's Innovation and Funding Partner. Together, Waterfront Toronto and Sidewalk Labs will join with citizens and other partner entities to develop a Master Innovation and Development Plan (MIDP) over the next 12-18 months. The MIDP will be subject to review by Waterfront Toronto's Board and its shareholder governments, as well as Sidewalk Labs' Board and the relevant government regulatory authorities.

Proposed Coordination Entity:

The Quayside Executive Steering Committee is intended to provide tri-government project-level oversight and coordination for the Quayside initiative. The Committee will be convened by Waterfront Toronto and include representatives from Sidewalk Labs, the City of Toronto, the Province of Ontario and the Government of Canada.

Role and Responsibilities:

The Quayside Executive Steering Committee will be the project-level oversight and coordination vehicle for reviewing, evaluating and providing input on the following:

1. Plan Development Agreement (timeline and budget);
2. Valuation Methodologies (including approaches for land valuation, acquisitions, and disposition; infrastructure systems, delivery and funding; and participation in technology platforms that provide data/support to infrastructure systems and vertical buildings; and
3. Master Innovation and Development Plan.

The Quayside Executive Steering Committee will be the organizing entity to:

1. Review initial pilot projects before proposals are formally submitted to approving government regulatory authorities;
2. Monitor and refine the public and stakeholder engagement plan;

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3. Identify input on approval pathways for proposed project innovations;
4. Provide input on procurement protocols for WT assets;
5. Provide input and direction on procurement protocols for assets outside of WT's purview;
6. Review spending against identified budget;
7. Review proposed milestones and schedule;
8. Review and provide input on project-related risk management protocols;
9. Provide additional coordination with other non-Waterfront Toronto capital projects;
10. Refer policy and/or unresolved issues to the IGSC; and
11. Review on going reports on project performance.

The Quayside Executive Steering Committee may delegate aspects of this work to the Project Delivery Team.

Chair:

The responsibility of the chair will be shared on a rotating basis after each meeting between interested members.

Membership:

The Quayside Executive Steering Committee will be comprised of the following:

- Waterfront Toronto: President and CEO;
- Sidewalk Labs: President;
- City of Toronto: Deputy City Manager Cluster B;
- Government of Ontario: Deputy Minister, Ministry of Infrastructure
- Government of Canada: Assistant Deputy Minister, Smart Cities Directorate, Infrastructure Canada

Representatives of political offices (e.g., Toronto Office of the Mayor) will be invited to participate in meetings.

Quayside Executive Steering Committee meetings will be attended and supported by senior project manager staff/directors from each participating organization that is part of the Project Delivery Team.

Project Delivery Team and Administrative Support:

The Project Delivery Team will be comprised of Waterfront Toronto and Sidewalk Labs staff who will deliver the project and will include senior project manager staff/directors from other participating organizations and key consultants and contractors.

Waterfront Toronto will be responsible for drafting records of discussions, following up on decisions and actions, disseminating information, distributing meeting documentation, scheduling meetings and logistical arrangements, as required.

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Dispute Resolution:

Any disputes involving Waterfront Toronto and Governments will be escalated to the IGSC.

Any disputes involving Waterfront Toronto and Sidewalk Labs will be managed through the Framework Agreement dispute resolution process or other legal documents which may supersede the Framework Agreement through the project lifespan.

Meetings:

Quayside Executive Steering Committee meetings will be convened every six (6) weeks. The schedule of meetings will be established by its members and meetings will be held in-person or by teleconference.

Agendas and agenda materials are to be prepared by the Project Delivery Team, with review of the City's Waterfront Secretariat and circulated one week in advance.

Reporting:

The Quayside Executive Steering Committee will prepare and circulate a covering memorandum and meeting minutes to the IGSC within two weeks after each Quayside Executive Steering Committee meeting. The covering memorandum will summarize key issues, and most importantly, flag any matters that may require the IGSC's attention.

Term:

The Quayside Executive Steering Committee shall exist and operate until the approval or disapproval of the Master Innovation and Development Plan. This Terms of Reference shall be revisited and updated by the Quayside Executive Steering Committee and IGSC members if the Quayside Project goes forward beyond the MIDP stage.

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WATERFRONToronto SIDEWALK LABS

SIDEWALK TORONTO

Quayside Executive Steering Committee

March 26, 2018

Scope of MIDP

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The Master Innovation and Development Plan (MIDP) will deliver the necessary information for WT, SWL, the three levels of government and other stakeholders to understand how the Sidewalk Toronto vision can be realized and create a process for it's possible implementation.



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The “MIDP” is our own term created to describe all that goes into the package of information that enables Sidewalk Toronto to proceed

- The MIDP is a **dynamic document;** its contents and scope will shift to reflect decisions determined throughout the MIDP development process
- The MIDP is a **strategic document;** how content is handled will reflect Sidewalk Toronto’s strategy for numerous objectives
- The MIDP product **reflects negotiations** throughout the MIDP development process; it will evidence the scrutiny, assessment, and contributions of numerous internal and external stakeholders, including government entities
- The process of developing the MIDP will **create alignment** between Sidewalk Labs, Waterfront Toronto, and all three levels of government

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While the elements of the MIDP may evolve, the package must ultimately provide the basis for moving forward with Sidewalk Toronto

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1 TECHNOLOGY VALIDATION

Evidence that our Pillars are making meaningful progress against our innovation objectives, and have sufficiently advanced and de-risked our technology program through deep engagement with the market and early pilots

2 QUAYSIDE PLAN

A detailed plan that provides the basis to proceed with the development of Quayside as a test bed for the broader site, including details on a likely meaningful capital investment needed to begin development

3 DISTRICT SCALE

A concrete framework for development, including detailed plans for district-wide systems; a vision that justifies a new approach to the Eastern Waterfront and a strategy in place to ensure adjacent work does not preclude the ability to execute SWTO's vision

4 REGULATORY PATHWAY

A set of documents that will be the basis to engage public sector entities (from City Council to the Provincial Municipal Board) to enable iterative implementation of Project Sidewalk across the Eastern Waterfront, consistent with our vision and plan

5 PUBLIC SUPPORT

Demonstrable public support for our plan that creates support for bold opportunities and mitigates reputational risks

6 FINANCIAL MILESTONES

Milestones that validate our financial model including relevant capital formation and updated, more rigorous sensitivity analysis around key risks

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Scope of the MIDP will be based on the following work programs

- Sustainability
- Mobility
- Public Realm
- Buildings
- Community and City Services
- Digital Platform
- Development Planning
- Housing Affordability
- Economic Development
- Privacy and Data Governance
- Early Actions

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MIDP Progress

The first SWTO Working Summit, focused in large part on alignment of the MIDP scope, took place on February 28th.
It marked an internal deadline where each work stream clearly articulated...

01

Objective

Vision for the workstream with an emphasis on where objectives have evolved through the Waterfront
Toronto / Sidewalk Labs collaboration post-RFP selection

02

Q1 Work Highlights

Major efforts and milestones that have been completed between the announcement and today

03

Draft Initiatives / MIDP Process Priorities

The (WIP) structure and priorities for what the breakdown of work looks like within this workstream

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Pages 329 to 337
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c), 20(1)(d)
of the *Access to Information Act*

****

Les pages 329 à 337
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c), 20(1)(d)
de la loi sur l'accès à l'information

Neighbourhood Association Meetings: Attend and make presentations at the request of neighbourhood associations and/ or local organizations. Presentations and summary notes will be posted to the web site (www.sidewalktoronto.ca).

- February 26: West Don Lands Association
- March 13: York Quay Neighbourhood Association
- March 28: St. Lawrence Neighbourhood Association
- Others TBD

Public Roundtables: Present project updates and invite public to work in small, facilitated groups to help refine our thinking during key phases in the creation of the development plan. Meetings are also livestreamed. Presentations and feedback reports will be posted on the web site after each meeting. Four meetings currently planned:

- March 20: approximately 800 people attended and participated in person and more than 2,000 have viewed the presentation online.
- May 3
- July11
- October 3

Resident Reference Panel: Through a random mail drop to over 20,000 households across the city, residents were invited to volunteer to serve on the 36-member Sidewalk Toronto Reference Panel to provide the project team with planning and policy guidance. From those who volunteered, a panel of residents has been assembled that represent the diversity of Toronto. Meetings of the panel are not open to the public; however, the panel will produce a public report. Meeting dates are:

- April 21
- May 5
- June 2
- June 23
- September 25

Design Jams (Charrettes): Attend a design charrette to examine specific elements of the plan. Dates TBD (spring / summer 2018)

CivicLabs: Two-day sessions that bring together Torontonians to examine issues like mobility, housing, and inclusion. Dates TBD (spring / summer 2018)

Advisory Working Groups: Six Sidewalk Toronto advisory working groups have been formed, including approximately 80 local subject matter leaders as well as community members, to advise on: Sustainability, Public Realm, Housing Affordability, Community Services, Data Governance, and Mobility. These meetings are not open to the public, however, meeting summaries will be posted on the web site.

Public Talk Series: four talks planned over the next several months. The talks will feature acclaimed speakers discussing ways that cities around the world are preparing for the future

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and addressing challenges related to sustainability, mobility, housing, and inclusive urban design. These talks will not focus specifically on the Sidewalk Toronto project. Events are also livestreamed.

- March 27: The Future of Complete Streets.
- April 24: The Future of Affordable Urban Housing
- Next two talks TBD in the fall

Fellows Program: Twelve fellows between the ages of 19 and 24 from different backgrounds and fields — including urban planning and architecture, business, public policy, science and technology, media, and the arts — selected to study how Toronto can build its newest waterfront neighbourhood, Quayside, and make it a model for vibrant, environmentally sustainable, inclusive, and technologically advanced living. Fellows will travel to New York, Boston, Amsterdam, Copenhagen, and Vancouver to learn how different cities are revitalizing their waterfronts and using new urban technologies and will produce a report for the project team.

YMCA-Sidewalk Toronto Summer Kids Camp: Free summer camp for children, ages 9-12, to learn about the waterfront and explore ideas for its future. Anticipate three one-week sessions.

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MEMBERSHIP FOR QUAYSIDE COMMITEEE

	INTERGOVERNMENTAL STEERING COMMITTEE (IGSC)	WORKING GROUP (TWG)	QUAYSIDE EXECUTIVE STEERING COMMITTEE (QESC)
Federal	Deputy Minister, Infrastructure and Communities	Director, Program Operations Branch, Infrastructure Canada	
	Associate Deputy Minister, Infrastructure and Communities	Program Analyst, Program Operations Branch, Infrastructure Canada	Assistant Deputy Minister, Smart Cities Directorate, Infrastructure Canada
	Assistant Deputy Minister, Infrastructure and Communities Program Operations Branch	Junior Program Analyst, Program Operations Branch, Infrastructure Canada	
Provincial	Deputy Minister, Ministry of Infrastructure	Director, Realty Policy Branch, Ministry of Infrastructure	Deputy Minister, Ministry of Infrastructure
	Assistant Deputy Minister, Realty Division, Ministry of Infrastructure	Manager, Realty Policy Branch, Ministry of Infrastructure	
City	City Manager	Director Waterfront Secretariat	Deputy City Manager, Cluster B
	Deputy City Manager	Senior Corporate Management and Policy Consultant, Strategic & Corporate Policy, City Manager's Office	
WT	President & CEO		President & CEO
SWL			Josh Sirefman, Head of Development

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On January 17th, 2018 the Quayside Committee approved for recommendation to the Board a protocol for briefing governments. This protocol was approved at the March 29th board meeting. The protocol requires that the Quayside Committee share all significant documents and milestones with governments for comment and input in advance of seeking Board approval. This will be conducted through the Intergovernmental Steering Committee (IGSC) and the newly established Quayside Executive Steering Committee (QESC). The organizational chart for government engagement is attached.

The Quayside project will progress through a number of oversight bodies in the lead up to Board consideration:

- *Intergovernmental Steering Committee (IGSC)*
  - This committee has senior membership from the three orders of government and meets quarterly, or more frequently, as required to deal with public policy objectives. The IGSC meets quarterly.
- *Quayside Executive Steering Committee (QESC)*
  - This committee has been established at the request of the IGSC
  - The mandate and governance template is based on the successful Port Lands Executive Steering Committee.
  - The group has representation from the three orders of government.
  - Political staff will be invited to attend in an observer capacity.
  - This group will be more granular and operational in nature than the IGSC and will provide project level oversight. It will be a coordination vehicle for reviewing, evaluating and providing input on the Plan Development Agreement, land valuation methodologies and the Master Innovation and Development Plan.
  - The Terms of Reference and membership for the Quayside Executive Steering Committee are attached.
  - The QESC will meet monthly.
- *Quayside Committee of the Waterfront Toronto Board*
  - The Committee meets monthly with WT staff
  - The Co-Chairs meet bi-weekly with WT staff
- *Waterfront Toronto Board of Directors*
- *Quayside Project SteerCo*

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- This is an internal Waterfront Toronto/Sidewalk Labs executive leadership committee with representation from both organizations.

- Representatives are as follows:
  - For Waterfront Toronto - Will Fleissig, President & Chief Executive Officer and Meg Davis, Chief Development Officer
  - For Sidewalk Labs - Dan Doctoroff, Chief Executive Officer and Josh Sirefman, Head of Development

WT management will work with the Quayside Committee Co-Chairs to ensure that the appropriate information and issues are raised at each level of the governance structure.

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Digital Innovation & Data Governance

MASTER INNOVATION AND DEVELOPMENT PLAN BRIEFING
FOR ASSISTANT DEPUTY MINISTERS

ALYSSA HARVEY DAWSON | CRAIG NEVILL-MANNING | MARCH 5, 2019

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Overview

Outline of this presentation

We'd like to give you an overview of the Digital Innovation & Data Governance chapter of the Master Innovation and Development Plan.

Because we're discussing this out of the context of the earlier chapters that focus on quality of life goals, we will briefly summarize some of these goals.

We will also describe one set of technologies designed to improve mobility, in order to motivate the technologies and processes we are proposing.

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Overview

Outline of this presentation

SIDEWALK LABS

Current draft chapter outline:

1. More Affordable and Flexible Digital Infrastructure
   Ubiquitous connectivity, "urban USB port", distributed credentials

2. Data Standards That Are Open and Secure
   Data formats, APIs, open access, open source interfaces, resiliency, security, data residency

3. Creating a Trusted Process for Responsible Data Use
   Urban Data Collective, Responsible Data Use Guidelines and Assessment

4. Core Digital Services That Others Can Build On
   Systems to support management of mobility, outdoor comfort, flexible retail, public realm maintenance, open space use, mixed-use buildings, energy, building waste, stormwater

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Overview

Principles

No tech for tech's sake

The goal of this project is not to develop digital technology or gather data – it's to improve quality of life in cities. We're not proposing any digital infrastructure or use of data that's not required to achieve quality-of-life goals.

Catalyze innovation by others

Anyone should be able to participate in creating any part of the neighbourhood's infrastructure, services and applications – and it should be significantly easier here compared to existing cities. No vendor lock-in – including for Sidewalk Labs.

Gather and use data responsibly

No data for data's sake: building on Privacy by Design, only gather data when it's required for quality-of-life goals.
An independent Urban Data Collective should develop and implement guidelines and assessments for data gathering and use.

Push the envelope

As long as the principles above are satisfied, buy or build technology that will most significantly, safely and cost-effectively improve quality of life.

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Quality-of-life goals

A MOBILITY system that is more convenient than the private automobile

SIDEWALK LABS

Goals

Reduce congestion

Increase safety

Adapt to new forms of transport from self-driving cars to scooters

Personal Rapid Transit

Responsive Traffic Signals

Possible data required:

Location of streetcars

Current availability of curb space

Volume of pedestrians, cyclists, vehicles

How long do people have to wait to cross the street?

Real-time alerts to autonomous vehicles of pedestrians and cyclists around the corner



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Quality-of-life goals

A new standard of SUSTAINABILITY

SIDEWALK LABS

Goals

75% per capita greenhouse gas reduction

Reducing building energy demands

Better management of stormwater

Extensive green infrastructure

80% waste diversion from landfills

Possible data required:

Energy use

Heating and cooling effectiveness

Water quality

Air Quality

Flow rates through stormwater, water and sewer pipes

Waste volume in public trash cans

Recycling rates



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Quality-of-life goals

A PUBLIC REALM that serves as the city's living room

SIDEWALK LABS

Goals

Streets That Put People First

Mixed-Use Built Environment

Flexible Public Space, Retail, Cultural and Community Amenities

Outdoor comfort

Possible data required:

Which parks are used most heavily?

Which retail spaces are available?

Which trash cans need to be emptied?

Are there any tree limbs down after a storm?

Hyperlocal weather

Decibel levels



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Quality-of-life goals

A BUILT ENVIRONMENT that is more usable, efficient and affordable

SIDEWALK LABS

Goals

Enable mixed-use buildings

New construction methodologies that are cheaper and greener

Buildings that achieve energy use, climate, and other goals

Possible data required:

Indoor air quality

Smoke sensors

Vibration, noise, odor sensors around light industrial uses

Water leak detection



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Overview

Mobility: Dynamic Curb

SIDEWALK LABS

To motivate the digital infrastructure and data use, let's look in depth at one specific example.

Note, it's one example of many in our proposal – this is purely for the purposes of concreteness.

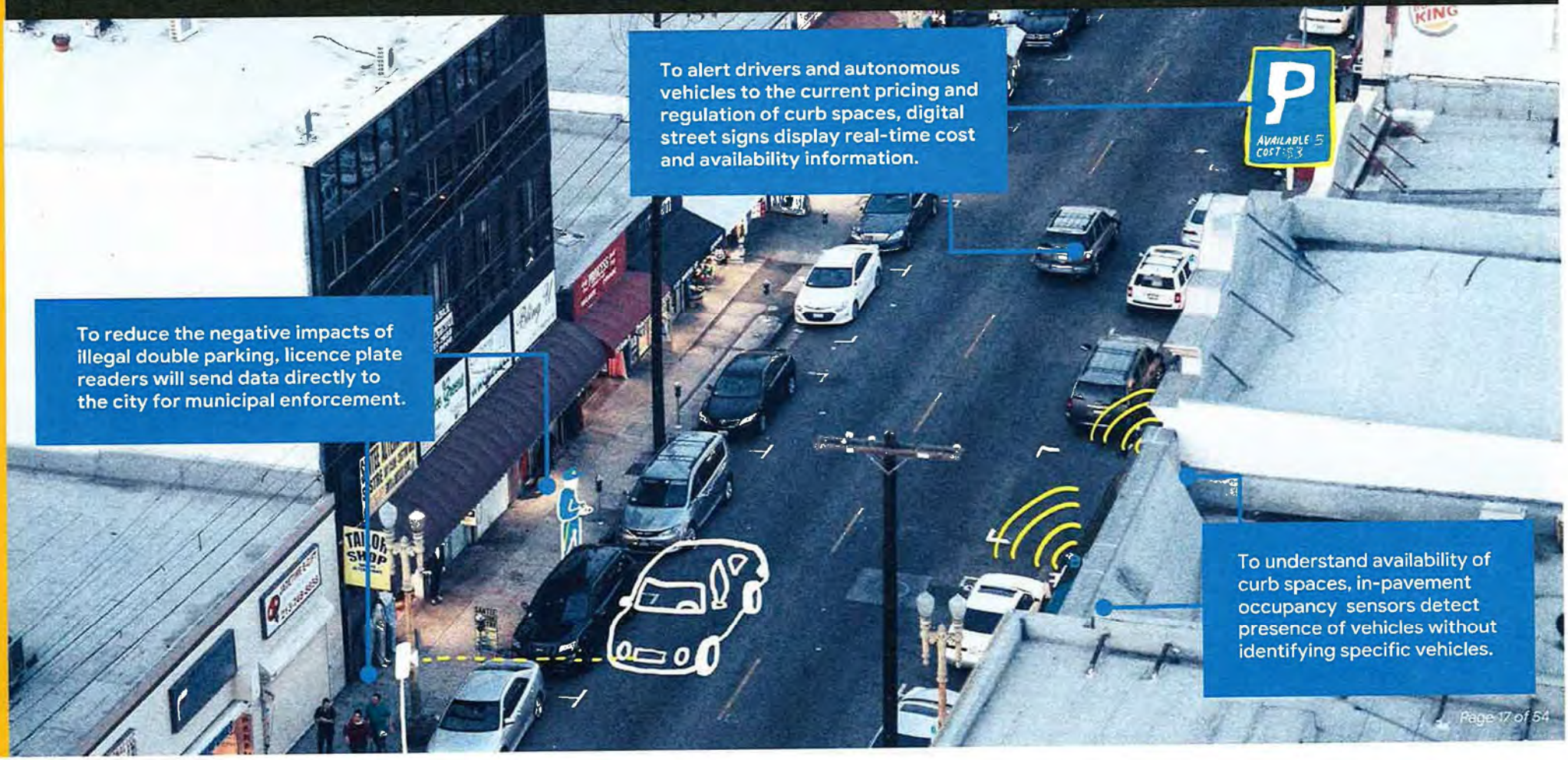
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Quality of life goals

Reduce congestion, increase safety at curbs

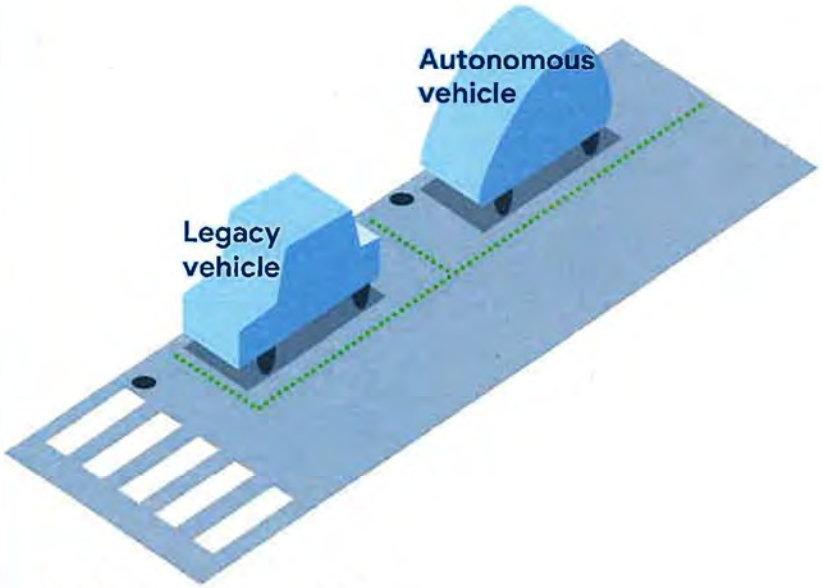
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Quality-of-life goals

Mobility: Dynamic Curb



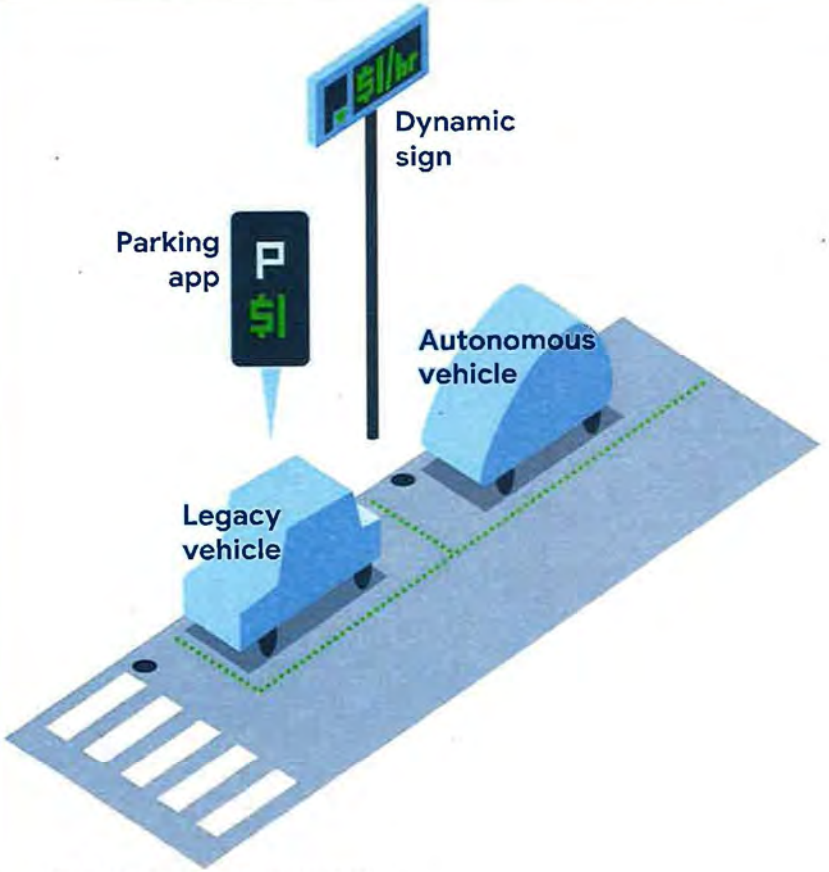
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Quality-of-life goals

Mobility: Dynamic Curb



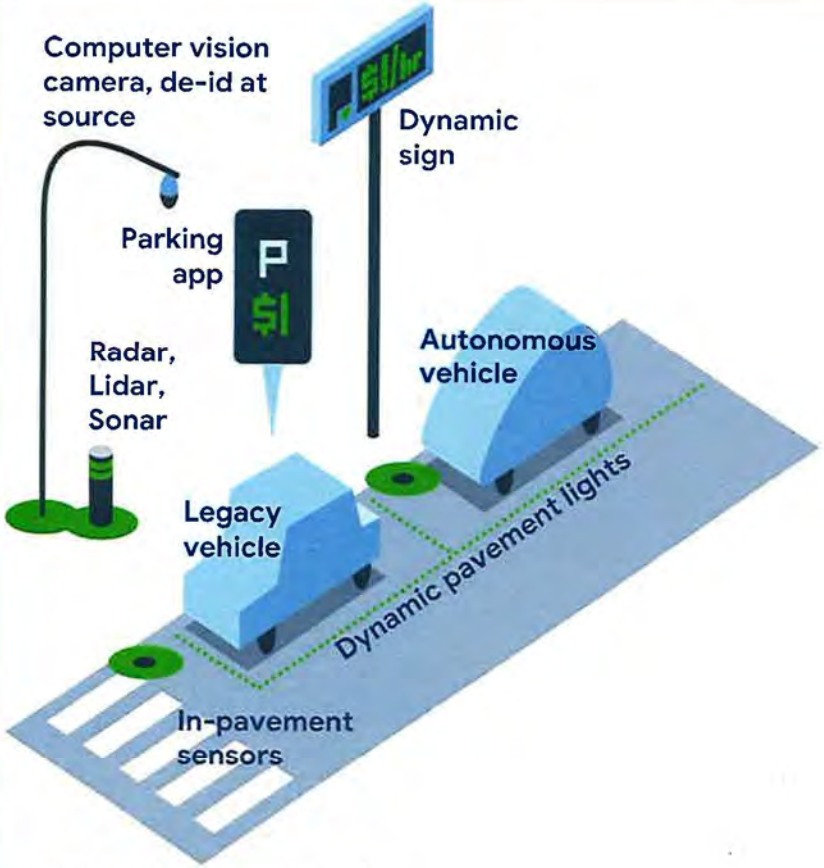
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Quality-of-life goals

Mobility: Dynamic Curb



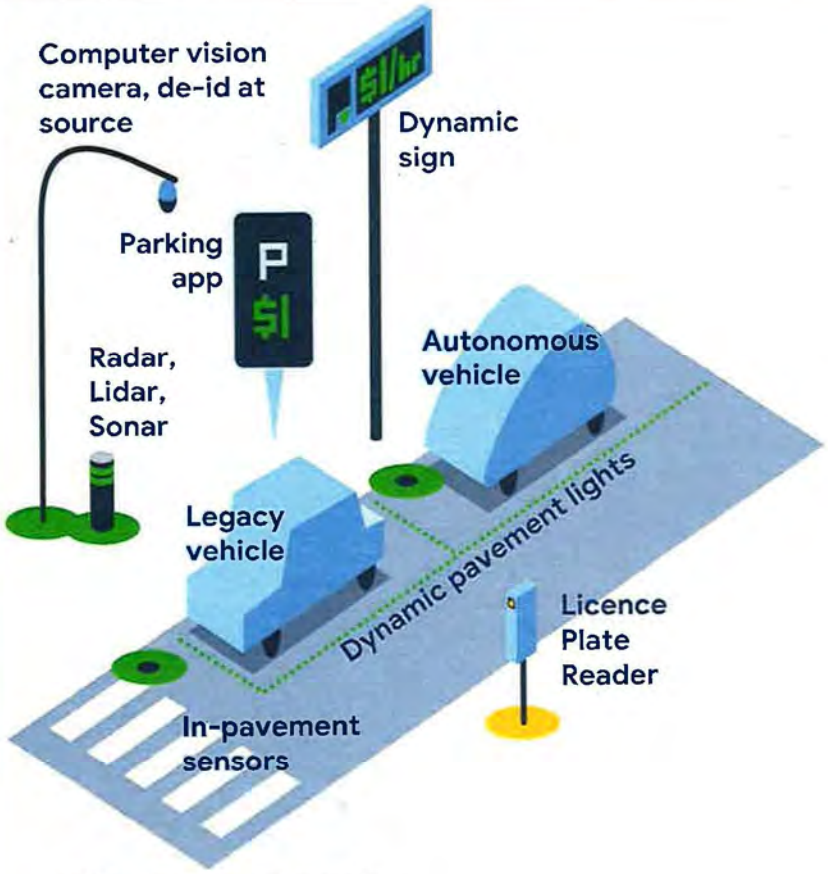
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Mobility: Dynamic Curb



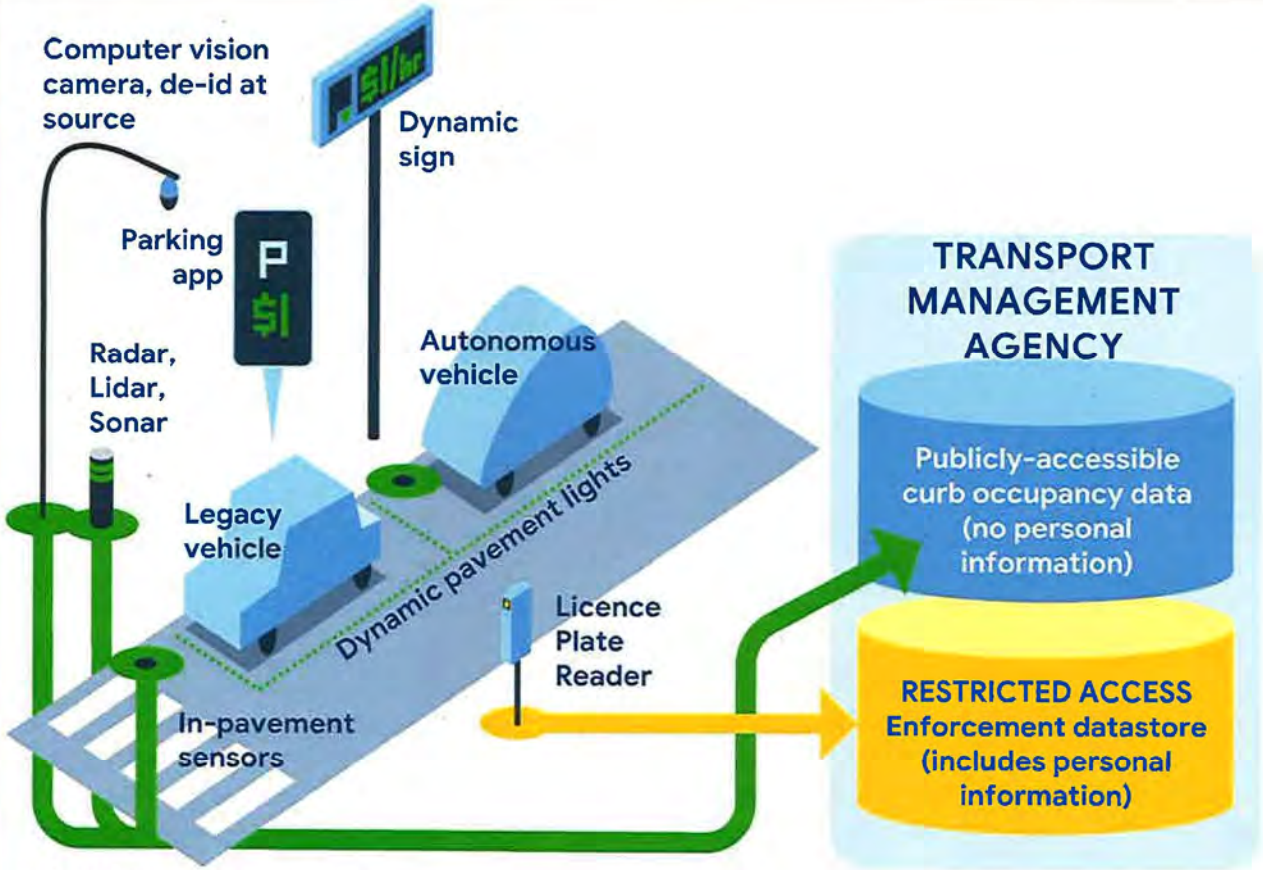
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Quality-of-life goals

Mobility: Dynamic Curb



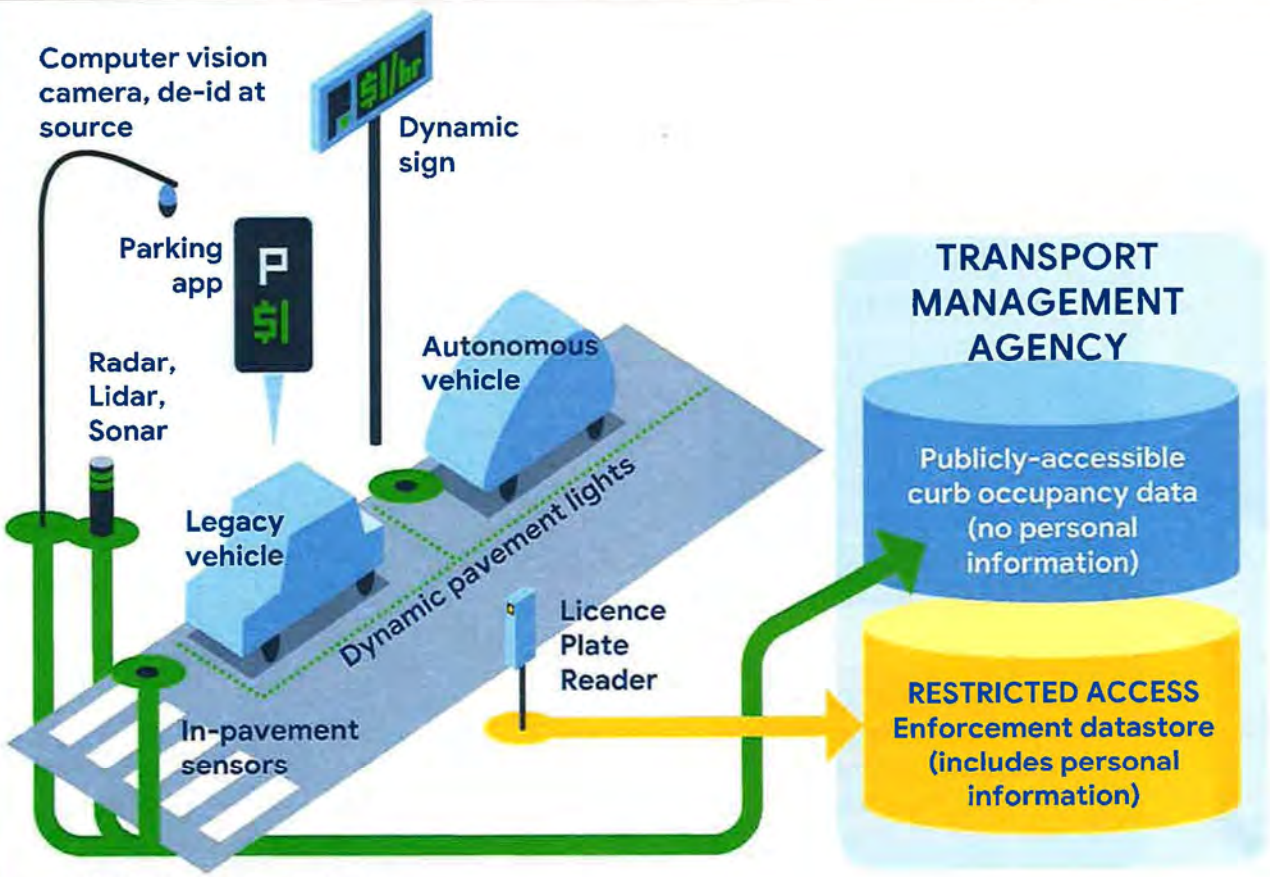
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Mobility: Dynamic Curb



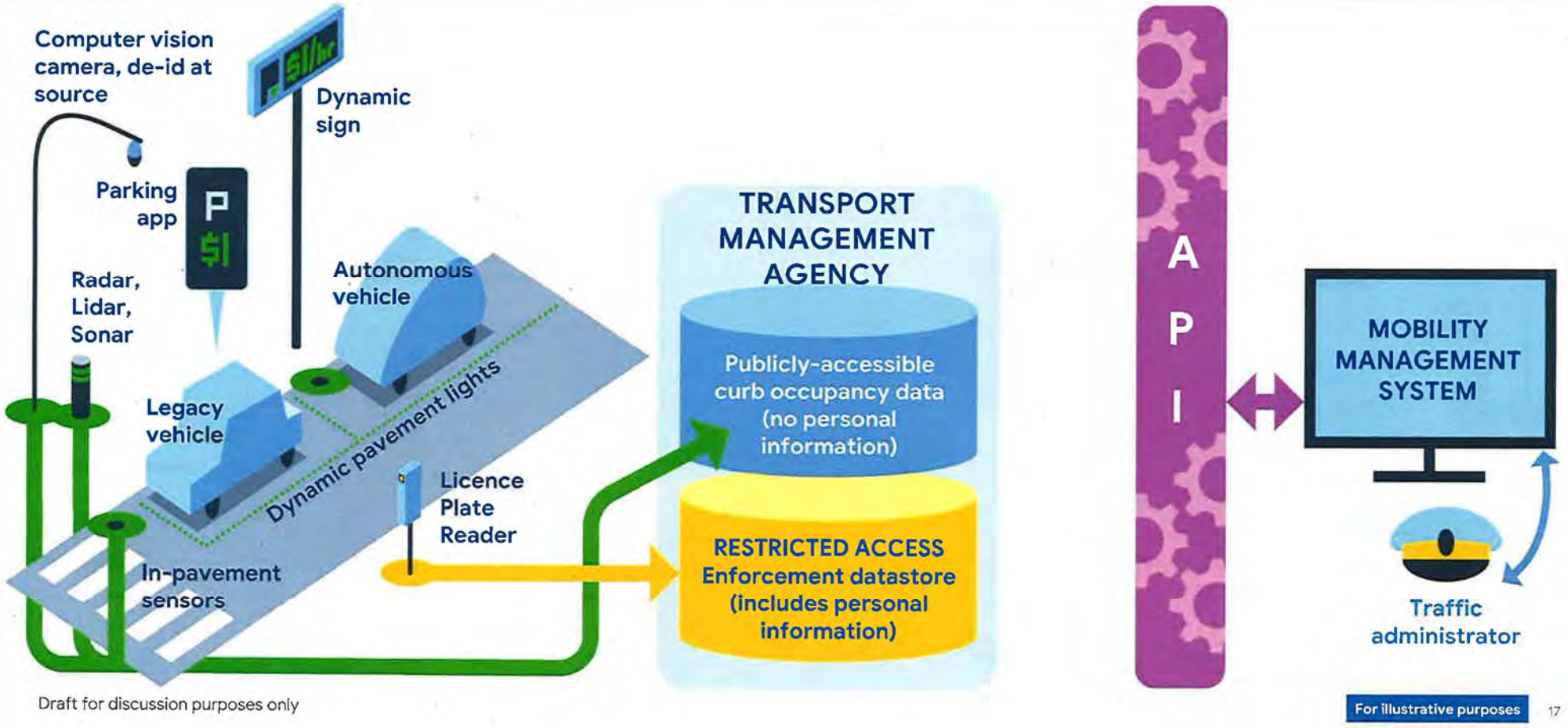
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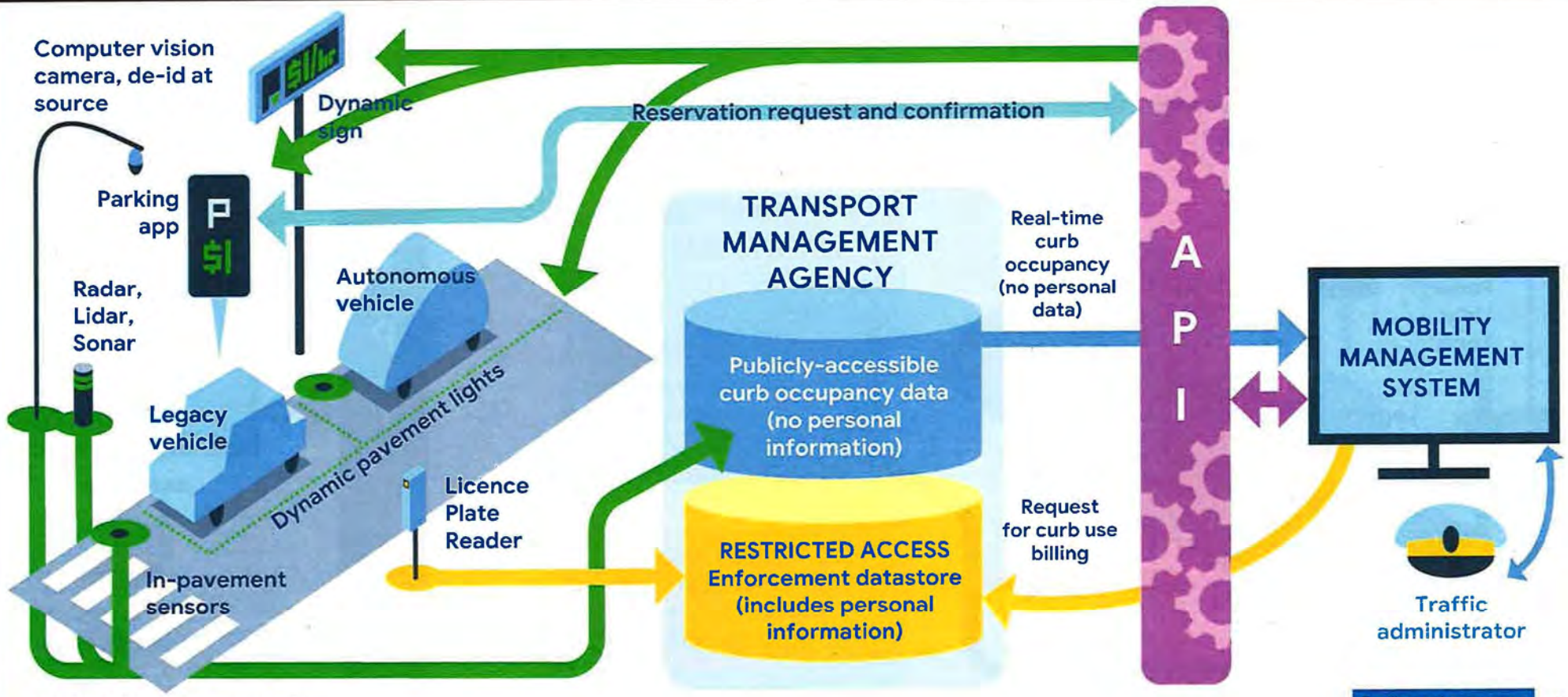
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Quality-of-life goals

Mobility: Dynamic Curb

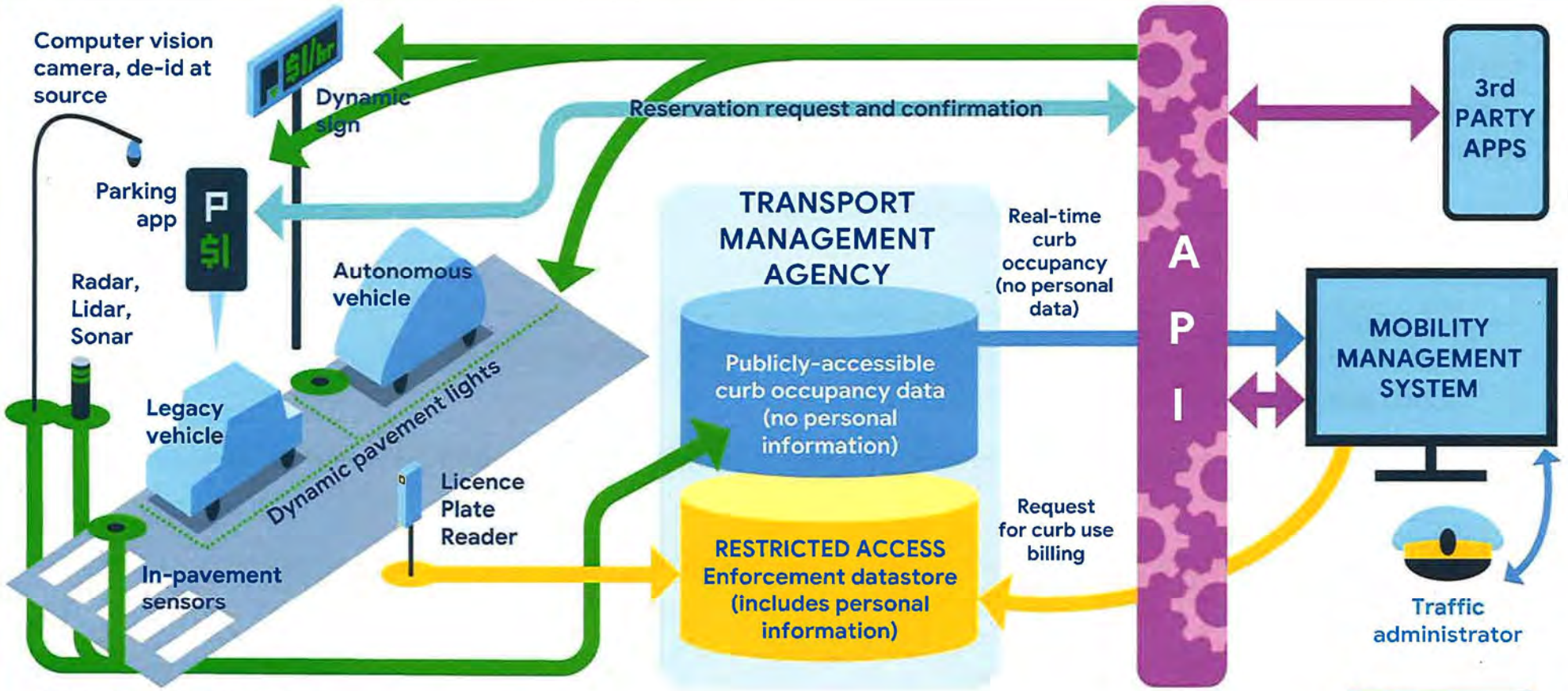


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Quality-of-life goals

Mobility: Dynamic Curb



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Quality-of-life goals

Further reducing data collection

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As the state of the art in privacy techniques evolve, we believe that the interaction between the person or vehicle requesting curb space and the mobility management system could happen without any personal information.

- The requestor may not have to provide an identity — instead, they could provide a single-use number for this reservation.
- The mobility management system may issue a digitally-signed reservation — a so-called "zero-knowledge proof" — so that the requestor may prove that they have a valid reservation for the curb space without revealing their identity.
- Payment may be possible anonymously using similar techniques, rendering the entire transaction anonymous.

Our objective is always to improve quality of life while minimizing the amount of data — especially personal data — required.

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Overview

Digital Innovation Chapter Outline

1. More Affordable and Flexible Digital Infrastructure
2. Data Standards That Are Open and Secure
3. A Trusted Process for Responsible Data Use
4. Launching Core Digital Services That Others Can Build On

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More Affordable and Flexible Digital Infrastructure

SIDEWALK LABS

Ubiquitous connectivity

- Advanced optical network
- Flexible building connections
- Optimized wireless infrastructure
- A seamless and secure neighbourhood-wide network

Reduced installation and maintenance costs with an "urban USB port"

A distributed credential infrastructure to protect privacy

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More Affordable and Flexible Digital Infrastructure

A Note on Ownership

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The first two sections address fiber infrastructure and network topology.

We plan to work with existing providers to introduce these new technologies and build on the work done to date by Waterfront Toronto.

As with all digital infrastructure, **residents and businesses would not be required to use these solutions.**

01
Neighbourhood-Scale Software-Defined Network

02
Super Passive Optical Network

03
Koala™ Standard Outdoor Mounts with Power & Connectivity

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More Affordable and Flexible Digital Infrastructure

Challenges for Neighbourhood-Wide Connectivity

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Deploying fiber, connections inside buildings, provisioning residential or business internet connections, and dealing with home routers is very expensive, and often insecure.

The technologies proposed hope to alleviate some of these problems.

Fiber Router



Fiber networks are difficult and expensive to upgrade as technology improves, and often aren't used efficiently.

Home Routers



Maintaining, updating, and debugging home networking equipment is technically challenging, and often
falls to consumers

Security Risks



Home routers with default passwords and misconfigured firewalls
create vulnerabilities.

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More Affordable and Flexible Digital Infrastructure

Neighbourhood-Scale Software-Defined Network

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Why

- ISPs provide firewalls, which provide imperfect security, while making it very difficult for subscribers to access devices in their homes and office when they're not there.
- Subscribers are currently required to manage their own Wi-Fi equipment, which is technically challenging, results in vulnerabilities, and often results in interference between apartments.
- Internet of Things devices are hard to deploy, and are often insecure.

What

- Software-Defined Networks allow much more sophisticated, customized routing – for example, a private network for each subscriber including their home, school and office, regardless of their location.
- Will integrate with and support emerging 5G networks, as well as managed Wi-Fi access points to create seamless access with minimal interference.

How

- Internet of Things devices can be quarantined if they start exhibiting unusual behavior – trying to communicate with unknown internet endpoints, transmitting significantly more data than expected.
- Managed Wi-Fi significantly improves performance without requiring subscribers to be part-time network engineers.
  - Optimizing Wi-Fi systems with the layout of the city and buildings in mind can be done efficiently at scale.

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More Affordable and Flexible Digital Infrastructure

Super Passive Optical Network (Super-PON)

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Why

- Fiber infrastructure often carries a small number of wavelengths, leading to underutilization of physical infrastructure
- Upgrading the network requires new equipment at multiple points throughout the physical network increasing costs and making upgrades difficult.

What

- Many more wavelengths sharing a fiber, one wavelength per building
- Passive optical splitters at intermediate points
- Each building detects its wavelength only
  - Upgrades only require new equipment at endpoints, not at intermediate points in the network

How

- New Super-PON approach, currently under consideration by IEEE 802.3 standards committee
- We plan to work with existing, local companies with experience in fiber deployment and service delivery.
  - We would provide specifications and technical expertise in this new approach

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More Affordable and Flexible Digital Infrastructure

Super-PON

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Each building gets a different wavelength of light. Allows for:

- Reduced cost through reduced infrastructure
  - Less fiber required
  - Fewer network point of presence buildings
  - Less active equipment at intermediate points
  - Reduced power: light is generated at the head end and passive all the way to the receiving end
- Higher bandwidth, despite reduced fiber requirements



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More Affordable and Flexible Digital Infrastructure

Buildings — Proposing New Specifications for This Tech

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Sidewalk Labs proposes that buildings conform to specifications that balance the goals of this Super-PON network with the ability for other providers to offer their own network services:

Points of Entry

Multiple point-of-entry locations

Conduits

Incoming conduits meet a set of specifications (e.g. buried depth, distance from water and sewer lines, coating materials, etc)

Meet-Me Room

A single location in the building where all telco-related equipment is installed with backup power and spare capacity.

Typical in commercial buildings, but less common in residential.

Risers

A vertical riser, dedicated to telecommunications wiring, accessible on each floor and designed for increased capacity

Cabling

Cat 6A wiring (or better) to every room for Power Over Ethernet wireless access points.

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More Affordable and Flexible Digital Infrastructure

Koala: Standard Outdoor Mounts with Power & Connectivity

SIDEWALK LABS

Why

- Mounting, maintaining, & upgrading signals and sensors is **expensive, disruptive and time consuming**
  - Avg cost per intersection for Adaptive Signal Control: $20k-30k
- This leads to **slow adoption cycles** for new technology
- Example devices:
  - Lights
  - Wi-Fi access points
  - 5G cell base stations
  - Temperature, wind speed, humidity, rainfall sensors
  - Lidar, radar, other sensors collecting non-personal data

What

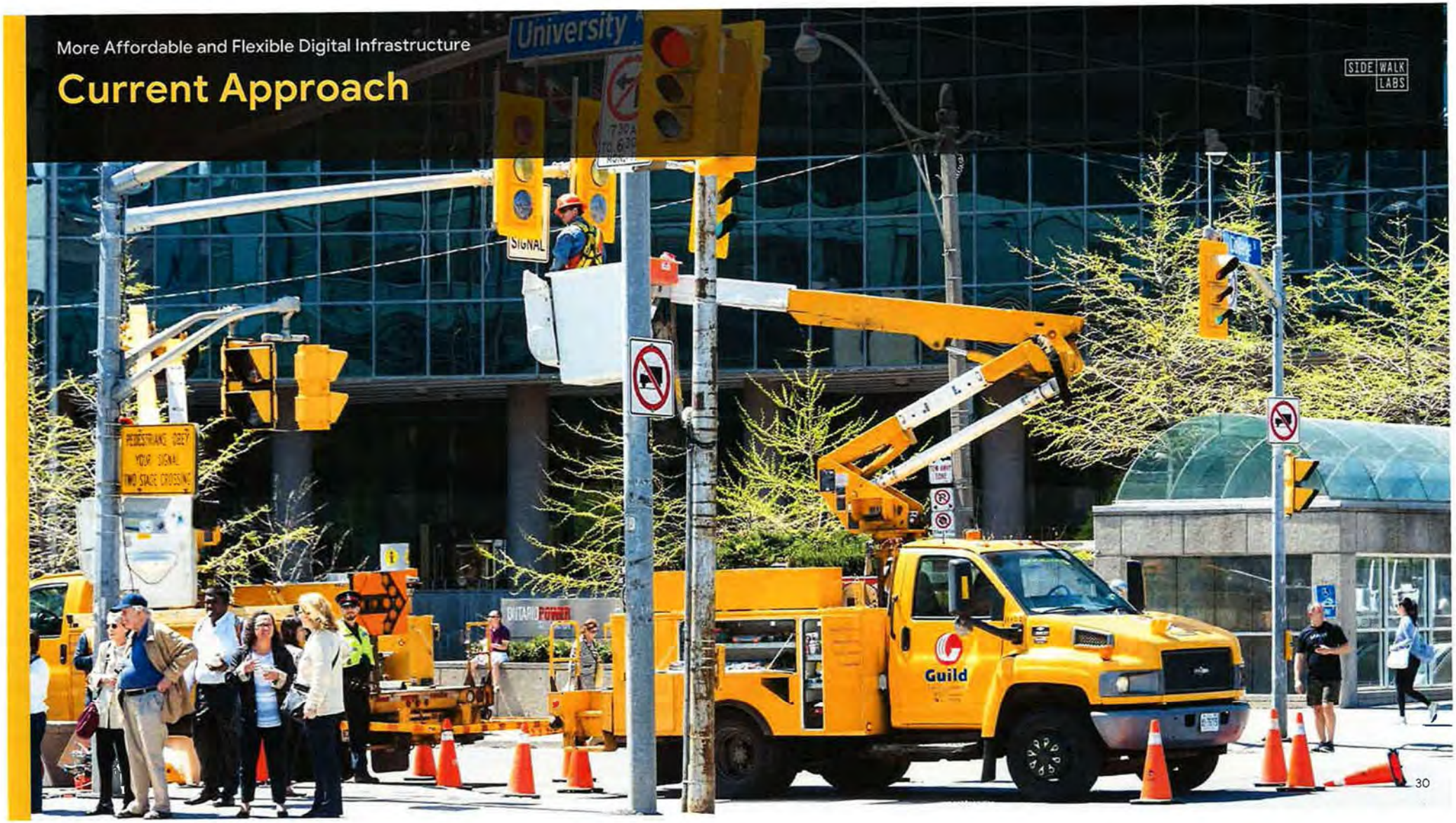
- **Flexible, standardized infrastructure** that can host many types of street digital infrastructure
- Similar in spirit to USB, but suitable for the demands of the public realm on street poles

To be clear, the Koala is simply a mount and connector, **not a device that collects urban data.**

How

- **Current prototype** (subject to change):
  - Hermetically sealed package
  - 200 Watts
  - **6 gigabits per second** of data through short-range wireless or wired connection,
  - Mechanical mount that is **installable and removable by ground-based operators** with special poles (and in the future, possibly by drone)

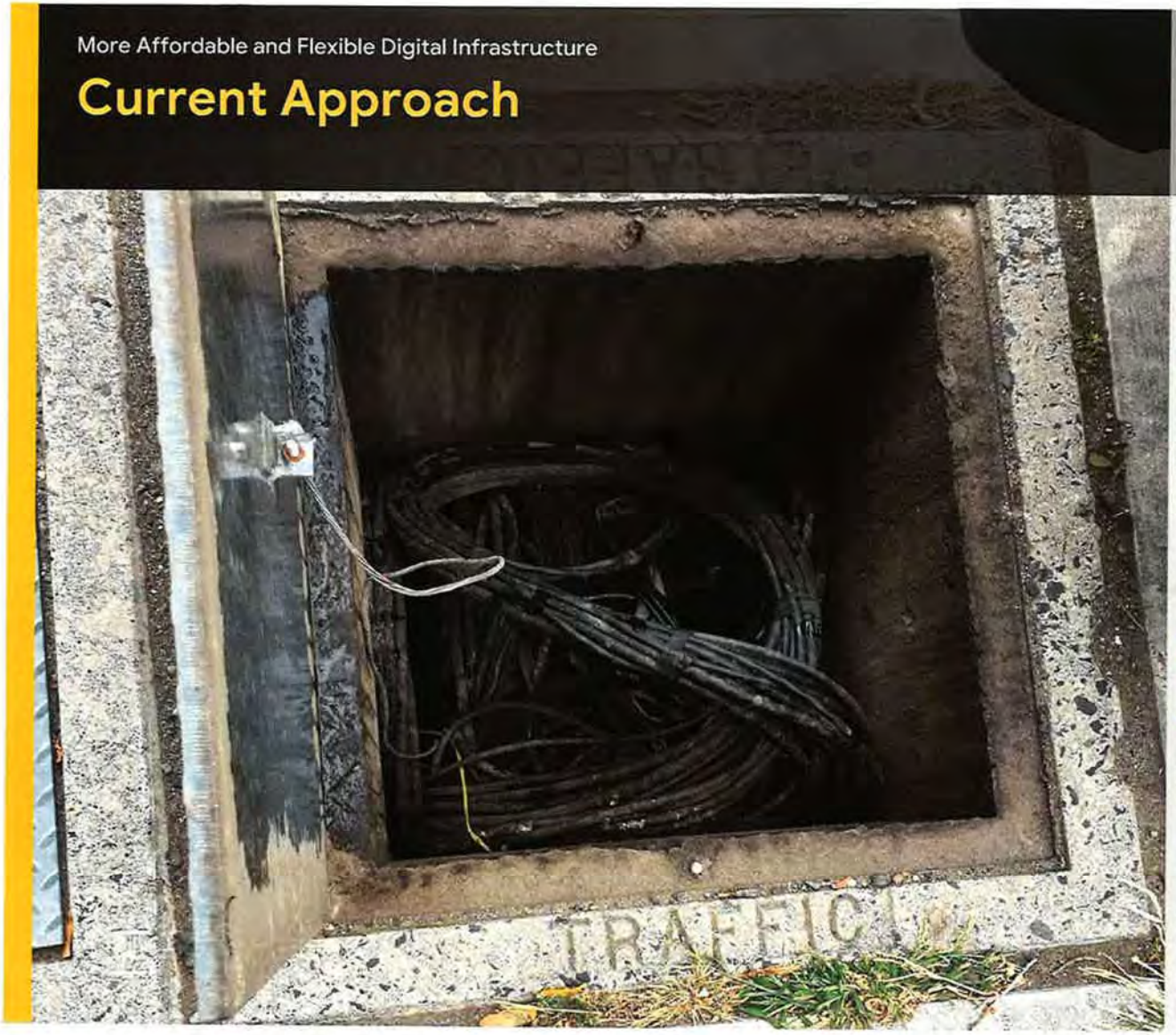
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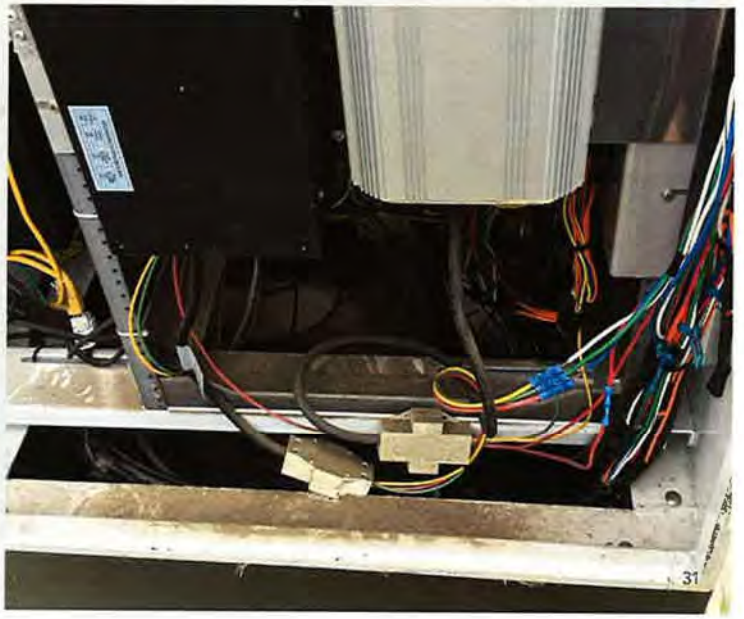
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More Affordable and Flexible Digital Infrastructure

Current Approach







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More Affordable and Flexible Digital Infrastructure

City of the Future?

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More Affordable and Flexible Digital Infrastructure

Koala – General Requirements

SIDEWALK LABS

01

Mechanical Security & Ease of Installation / Removal

Infrastructure should be easy to install and maintain: able to be mounted or swapped out within minutes by human operators without large equipment or street closures.

It should also be robust to wind, dust, precipitation, temperature variations and other challenges of the urban environment.

02

Power

Client devices inevitably need power. Some devices, like displays and lighting, may require more than 100 watts of wired power.

Other devices, like air quality sensors, could possibly be powered through solar panels.

03

Connectivity

Most client devices will need to send and receive data. In locations like Quayside with high-quality, reliable wireless connectivity, most devices might not need hard-wired data connections.

If this system used for 5G antennas, a wired connection will be required.



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More Affordable and Flexible Digital Infrastructure

What Else Does Koala Provide?

SIDEWALK LABS

01

Security

Physical device authentication and data encryption

02

Civic Data Trust Control

Ability for Civic Data Trust to turn off network or power for devices out of compliance with Civic Data Trust requirements.

03

Ecosystem Development

Standardization and reduction of cost and disruption creates the conditions for a thriving ecosystem of urban technology creators, such as startups, researchers, or established companies.



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More Affordable and Flexible Digital Infrastructure

Using Koala Will Not Be a Requirement

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Devices will not be required to use Koala, but we hope that the **cost reduction and ease of use make them an attractive option**

Koala will be a standard, similar to USB

Device adoption will determine the standard's success



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Overview

Digital Innovation Chapter Outline

SIDEWALK LABS

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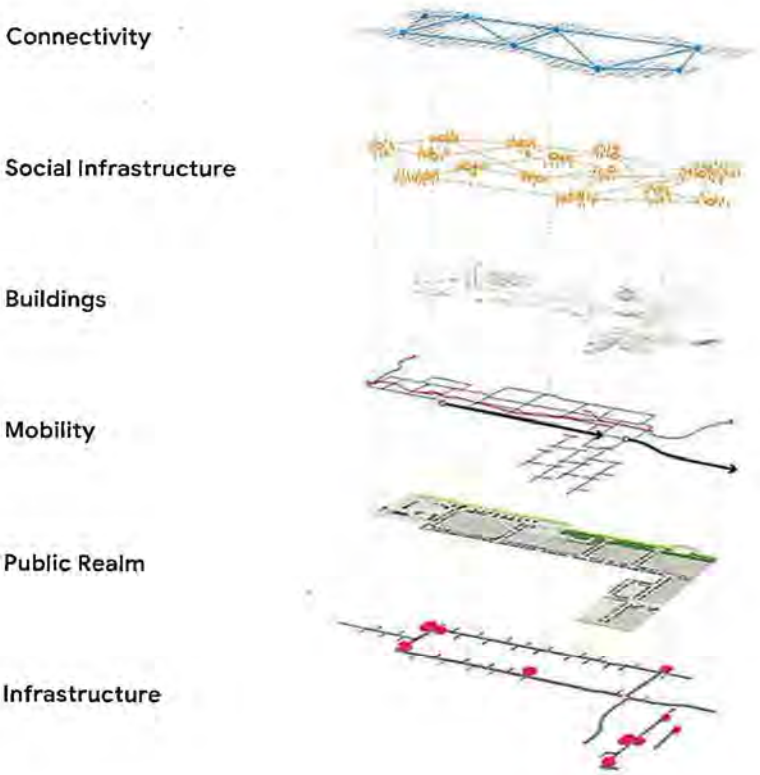
Data Standards That Are Open and Secure

Sidewalk Labs' Vision: Catalyze Digital Innovation

The ability to create the conditions for digital innovation is at the heart of Sidewalk Labs' vision for the city of the future. Digital innovation is the basis for many of the core planning initiatives that Sidewalk Labs will propose throughout the Master Innovation and Development Plan to improve mobility, affordability, sustainability, and economic opportunity. It is also essential for catalyzing an ecosystem of new services and solutions by Canadian companies, local Toronto entrepreneurs, and other third parties from around the world.

How we plan to get there

- Provide Affordable and Flexible Digital Infrastructure
- Set Data Standards That Are Open But Secure
- Create a Trusted Process for Responsible Data Use
- Launch Core Digital Services



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Data Standards That Are Open and Secure

Sidewalk Labs' Vision: Catalyze Digital Innovation

Designing technology to support our quality of life goals has revealed patterns: common pieces of infrastructure and specific services that are required to bootstrap digital innovation in the neighbourhood for Sidewalk Labs and others.

WHAT SIDEWALK LABS WILL BUILD

Taking the same approach to designing solutions for **sustainability**, **flexible public realm**, **community**, **buildings**, **accessibility**, etc. leads us to believe that we should create a new standard for digital infrastructure and services in cities, including:

- Ubiquitous connectivity
- Standardized mounts and power
- A high-resolution 3D map of the neighbourhood
- An open data hub which will provide real-time access to data in standard formats through well-documented interfaces

The fact that Sidewalk Labs is committing to build these components does not preclude others from deploying technology that improves on, competes with, or replaces them.

WHAT OTHERS WILL BUILD

The lion's share of technologies that make Quayside unique will be developed and deployed by an ecosystem of many innovators:

- Just as in the World Wide Web, multiple providers can coexist, and technological solutions can integrate, as long as they agree on standards
- Others should be welcome to provide better, different, cheaper infrastructure and services
- We hope that this will enable a wide range of Canadian startups to innovate more quickly, and use Quayside as a springboard to success
- All systems collecting or using Urban Data —whether created by Sidewalk or third parties—will be subject to Civic Data Trust governance

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Data Standards That Are Open and Secure

Open architecture makes this possible

Sidewalk Labs will not create a centralized, monolithic platform. Rather, we will work with partners to create an open architecture—one that enables and encourages collaboration and experimentation.

In order for anyone to innovate, and have the opportunity to replace components that Sidewalk Labs and others build, there must be no proprietary lock-in. This requires:

- **Well-documented, standardized formats and interfaces**
  - Any party will have the information required to build a replacement component for any urban system, or to create an entirely new application.
- **Easy access to public-domain data**
  - Standards are worthless if it's not possible to get access to data. For example, devising a new optimization algorithm for traffic requires training and test data, so traffic volume data should be made broadly available.
- **Data portability**
  - An existing system will likely have access to historical data provided to it by neighbourhood systems. This data should be able to be exported from the existing system so that new systems are not at a disadvantage for training and bootstrapping.
  - This is similar to email systems that allow the user to export all of their historical email messages so that they can move to a new provider, eliminating lock-in.

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Data Standards That Are Open and Secure

Example of an Open System: The World Wide Web

If urban technology used open standards in the same way that the World Wide Web does, innovation would explode, and the risk of vendor lock-in would be dramatically reduced.

SIDEWALK LABS

You can use any browser...

to visit any web page...

served by any web server.






Apache

NGINX

Microsoft IIS

LITESPEED

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Data Standards That Are Open and Secure

Example: World Wide Web Standards

Standards enable innovation and competition.

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Formatting
Hypertext Markup Language (HTML), Cascading Style Sheets (CSS)

Images
Portable Network Graphics (PNG), Joint Photographic Experts Group (JPG)

Interactivity
JavaScript

Communication
HyperText Transfer Protocol (HTTP)

Security
Secure Sockets Layer (SSL)

Anyone can build a web browser as long as it implements standards like HTML, CSS, JavaScript, HTML and SSL. The most popular browsers are free, and their cores are open source.

Likewise, anyone can build a web server as long as they implement HTTP, SSL, etc. The most popular servers are free and open source.

With partners, we hope to significantly advance a competitive, innovative urban technology ecosystem by using, developing, and promulgating standards.



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Published Standards

At the core of Sidewalk Labs' approach to catalyze innovation is the belief in the importance of published standards for digital hardware and software.

Sidewalk Labs has a three-part plan to achieve its goal of an open city

- First, it proposes to provide data in standard formats, and via well-defined, public application programming interfaces (open architecture). Where relevant standards do not exist, it proposes to work with other companies, researchers and standards bodies to create those standards.
- Second, it proposes to make this data publicly accessible by default (open access).
- Third, it proposes that the software source code required for others to integrate with each of these systems be made publicly available under a free software license (open source).



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Overview

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1. More Affordable and Flexible Digital Infrastructure

2. Data Standards That Are Open and Secure

3. A Trusted Process for Responsible Data Use

4. Launching Core Digital Services That Others Can Build On

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Responsible Data Use

Alyssa Harvey Dawson,
Sidewalk Labs - GC and Head of Data Governance

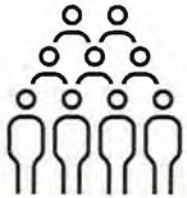
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Sidewalk Labs' Vision: Digital Governance Framework

SIDEWALK LABS

Urban Data Collective and Urban Data



Responsible Data Use Assessment



Responsible Data Use Guidelines



Published Standards



A New Global Model for the Collection and Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

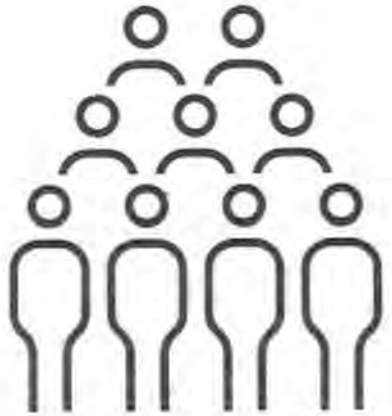
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Urban Data

What we heard

- Protect more data, not just Personal Information.
- Data use also impacts groups of people and communities.



How we responded

Torontonians want more data to be protected, so we are using a different term to apply to data collected in physical or common spaces, which includes "Personal Information" and information that is not connected to a particular individual.

Sidewalk Labs proposes to call this type of data "Urban Data".

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Urban Data

Urban data merits special focus because:

- The lack of transparency about sensors in the public realm causes a feeling of being surveilled and challenges whether consent is meaningful.
- The collection and use of personal and non-personal information impacts groups of people or the community.
- It is collected in a physical space in the city. Geography is one characteristic that, in combination with other considerations, make it stand out as worthy of additional responsible data use guidelines.
- Some types of Urban Data can reasonably be considered a public asset and should be made publicly accessible by default.

"Urban Data" is Personal Information, de-identified data, non-personal data, and aggregated data collected and used in **physical** or **community spaces** in the project area.

"Transactional Data" is a term we use to refer to data that comes from consent-based relationships between organizations and individuals (examples include data from apps, website, credit card transactions). Incorporating additional requirements on this type of data in connection with the project is not as feasible due to its transitory nature.

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Urban Data Collective

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What we heard

- In addition to personal and collective privacy, Torontonians are concerned with the ownership and stewardship of urban data.
- Urban Data is often considered a collective or community asset.
- Guidelines should be applied and enforced consistently to gain trust.

How we responded

Sidewalk Labs proposes that an independent entity - the **Urban Data Collective** - manage urban data and make it publicly accessible by default. Because of the novelty and complexity of this, we suggest that the Urban Data Collective be **implemented in two phases** - one focused on getting the body up and running quickly and the other on a more long-term solution.

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Urban Data Collective: Initial Implementation

Sidewalk Labs proposes that the final agreement between Waterfront Toronto and Sidewalk Labs call for **the creation of an independent, non-profit entity, the Urban Data Collective, as the digital governing body** for the Sidewalk Toronto project.

The UDC would enter into Data Sharing/Use Agreements with organizations, with terms governing the collection, storage, security, etc. of Urban Data. A breach of these terms would be actionable in court.

The agreement would:

- Require organizations seeking to collect or use Urban Data in the project area to apply to the UDC for approval;
- Authorize the creation of the Urban Data Collective entity

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Urban Data Board

The Urban Data Board would initially include a data governance/privacy/IP expert, a community representative, a public sector representative, an academic representative and a Canadian business industry representative.

The Board would hire a **Chief Data Officer**, who would be responsible for:

- Developing the Charter for the Urban Data Collective;
- Promulgating "Responsible Data Use Guidelines" that respect existing privacy laws but also apply new standards for collecting and using Urban Data;
- Structuring oversight and review processes;
- Determining how the collective will be staffed, operated, and funded; and
- Coordinating, as necessary, with privacy regulators and other key stakeholders.

The Urban Data Board could fundamentally operate in ways similar to Internal Review Boards or Research Ethics Boards in academic institutions for research or content moderation boards set up in-house at social media companies.

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Urban Data Collective

Funding

Sidewalk Labs proposes that each party that wants to collect and use data in the designated geography pay a **data collection and use administration fee** to cover the costs of the Urban Data Collective. These costs could include salaries for the Chief Data Officer, staff to manage the applications, reviews, audit and enforcement, and other customary expenses for the Urban Data Board.

Longer Term Options

After a period of time, we could envision that the UDC be transformed into a public-sector agency or a quasi-public agency.

Open Questions

- What are the pros and cons of each of these approaches?
- What would be the best way for the UDC to work with privacy regulators?

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Responsible Data Use Guidelines

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What we heard

- Sidewalk Labs should not have an advantage in the development of urban innovations.
- Concerns about data collection and use go beyond privacy laws and must also consider other concerns such as data stewardship, access to data, security, data ethics and responsible AI.



How we responded

The RDU Guidelines go beyond privacy to address key areas of digital governance, ethics, open access to information, as well as the ways in which aggregate or de-identified data can impact individuals and groups of people, including through the use of advanced analytics, such as artificial intelligence.

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Responsible Data Use Guidelines

Beneficial purpose. All projects must apply Canadian values of diversity, inclusion, and privacy as a fundamental human right. To do this, there must be a clear purpose and value to any proposed use of urban data, and a direct tie to the ways in which the project and proposed data collection activity are benefiting individuals or the community.

Publicly accessible by default. Organizations should make the de-identified or non-personal data that they have collected publicly accessible to third parties by default.

Transparency and explainability. Organizations should inform individuals of how and why their information is being collected and used, and do so in a way that is proactive, clear, and easy to understand.

Responsible AI. Organizations should develop algorithms according to principles that include fairness, accountability, inclusiveness, and reduce bias.

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Responsible Data Use Guidelines

Data minimization, security, and de-identification by default. Organizations should collect the minimum amount of data needed to achieve the beneficial purpose and should seek to use up-to-date de-identification techniques to reduce the personal information that they collect and use.

No selling or advertising without explicit consent. While there will not be prohibitions placed on data collectors who would like to sell data containing personal information or use such data for advertising, a higher level of scrutiny should be placed on projects that want to use personal information for these purposes. Sidewalk Labs has already committed publicly that it will not sell personal information to third parties, or use it for advertising purposes. It also commits to not share personal information with third parties, including other Alphabet companies, without explicit consent.

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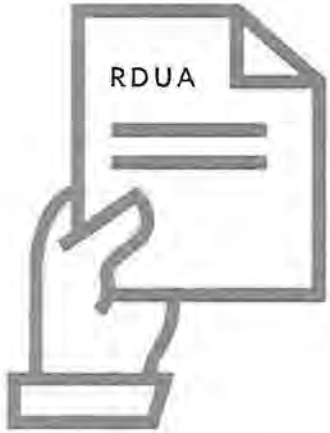
Responsible Data Use Assessment

The RDUA is a tool used to incorporate Privacy by Design, and examine other issues around data use, stewardship, security, and access.

Sidewalk Labs proposes that the RDUA be submitted to the Urban Data Collective for any product, pilot, or project that wants to collect or use Urban Data.

The UDC would use the RDUA to assess how the proposal conforms to the RDU Guidelines, including applicable privacy laws.

Sidewalk Labs has been developing this assessment tool internally with input from advisors and experts and has been using it to assess its pilot projects.



The RDUA is comprised of four sections:

1. Purpose
2. Data Sources and technology
3. Legal compliance
4. Risk-Benefit analysis

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Responsible Data Use Assessment: 1. Purpose

Purpose. The first section of the RDUA asks for a description of the purpose of the project, service, or product, including its objectives and goals, as well as the urban challenges it hopes to address. Some examples of questions that might be asked in this part of the RDUA include:

- What is the objective for this project? Clearly state the problem that is being solved.
- Clearly state the measurable goal or outcome of the project.
- How likely is the proposed technology and collection/use of data to solve the problem as described?
- What are the alternatives to the technology or method of collection? Why are they not sufficient?

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Responsible Data Use Assessment: 2. Data sources and technology

Data sources and technology. The second section of the RDUA requires a description of the technology or data-collection methods, the data sources or types, and the parties who have access to the data. Some of the questions asked in this section include:

- What are all the sources of the data, internal and external?
- Does the data activity involve personal information?
- Does this project involve the collection or use of data about people?
- Is the data observed (created as the result of individuals or activities being observed and recorded)?
- Is the data stored in Canada? If not, is there a reason beyond business case/financial considerations that the data would not be stored in Canada?
- Who are all the possible stakeholders and parties involved or related to the data activity? What are their interests and potential concerns?
- Is the data, or a subset of data, going to be used for advertising purposes?
- Is the data going to be sold to third parties?

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Responsible Data Use Assessment: 3. Legal compliance

Legal compliance. The third section of the RDUA captures conformance to applicable privacy laws. Examples of questions asked in this section include:

- Describe how the data activity complies with applicable Canadian privacy laws.
- If the data activity involves personal information, there must be explicit, express consent for collections, uses, or disclosures that: (i) involve sensitive information; (ii) are outside the reasonable expectations of the individual; and/or (iii) create a meaningful residual risk of significant harm. Please explain how you have achieved this requirement.
- Does the data activity include mechanisms that explain how data is used, how benefits and risks to individuals are associated with the processing, and how individuals may participate and object where appropriate?
- Describe the notice, consent and control provided to the user.
- If the data activity includes personal information, how has it been de-identified? If it has not been de-identified, what is the beneficial purpose for keeping the data identifiable?
- Is there a less privacy invasive data intensive way to achieve the goals of the data activity (including potential insights)?

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Responsible Data Use Assessment: 4. Sections

Risk-Benefit analysis. The fourth section of the RDUA asks the proposing entity to detail and rate the risks and benefits associated with the project and data collection activity, and how any risks have been mitigated. Example questions might include:

- Could the anticipated use of technology harm or benefit certain individuals, groups of people, or communities in unintended or unexpected ways?
- What are the benefits to the individual or groups of individuals? What are the impacts to the community of this data collection activity?
- Could the anticipated use of the data create a risk of harm to the individual or group of individuals?
- How does the data activity treat groups equally and fairly?
- Are there differences between areas and communities that need to be taken into account when interpreting the data? If so, how are those taken into account?
- Are you using analytical driven models, insights or algorithmic decision making, that could impact individuals?
- Is there a reasonable risk of harm to individuals or groups by releasing the data or the source code?
- How significant is the risk? How likely is the risk to be realized?

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Active Energy Management Use Example (Building Efficiency)

A private office building owner and operator wants to reduce energy consumption and emissions in one of its office buildings (Quayside 1) to test the feasibility of the initiative before bringing the same process to all of its buildings in Quayside.

The building owner will use the following methods of collection to collect and use the following data:

- Infrared motion sensors: occupancy data (aggregate data)
- Weather data from a third party and temperature data from the connected thermostats in the building (non-personal data)

The next slide is a brief illustration of how this proposed data activity could be reviewed, and depending on a balance of factors, including adherence to the RDU Guidelines, approved by the Urban Data Collective.

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Active Energy Management Use Example (Building Efficiency)

SIDEWALK LABS

Step 1: Classify the Data

The building is located in Quayside and the information being collected in a space that could be considered a public environment or public asset. The data activity involves data about people. This data activity involves Urban Data.

Step 2: Submit a RDUA

The building owner must complete a RDUA and an application detailing where the sensors would be placed. The RDUA would include a description of the project, a description of the data sources and types, how the data activity conforms to applicable privacy laws, and a full analysis of the data activity's impacts, risks, and benefits.

Step 3: The Decision

The UDC's Chief Data Officer would review the RDUA and application and, using the RDU Guidelines and guidance from the board, make a decision on whether to approve the data activity with reasons why or why not.

Step 4: Post-Approval Conditions

To ensure transparency, if the data activity has been approved, a summary RDUA is published, the sensors are registered and placed on a digital publicly accessible map, and non-personal information is made publicly accessible.

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4. Launching Core Digital Services That Others Can Build On

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Mobility management system To reduce congestion and encourage shared trips, this proposed mobility management system would coordinate all travel modes, traffic signals, and street infrastructure, and apply demand-based pricing to curb and parking spaces.	Curb space availability (e.g., non-personal occupancy sensors) Pedestrian and cyclist detection and counts (e.g., non-personal lidar/radar) Vehicle detection, counts, speed (e.g., using a camera that does de-identification at source) *Restricted data (not published for privacy reasons):* Vehicle identification data, such as license plate or transponder id, collected on behalf of city parking enforcement	A startup could build a trip app that helps find the fastest or cheapest or greenest way from A to B. A policymaker could create more informed policy decisions around parking availability and transit service. A self-driving technology startup could improve its pedestrian-detection system. A researcher could detect pedestrian near misses and evaluate the performance of intersection designs on street safety. Employers could start programs that encourage workers to shift commute times to decrease congestion.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Self-driving vehicles:* Aptiv, Cruz, Uber, Lyft, Waymo *Sensor and traffic management:* Miovision, Brisk Synergies, P3Mobility, Leddartech, SMATS Traffic, Numina, RapidFlow, NoTraffic, Axilion, GRIDSMART *Parking:* Jrop, Passport, Sensys, All traffic, Pay by phone, Cloudpark, Curbway *Routing apps:* Google/Apple/Bing Maps, Waze, Transit App

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Outdoor comfort system A proposed system of outdoor-comfort tools, deployed in real-time, could dramatically increase the amount of time it is comfortable outside: building raincoats to block rain, awnings to provide shade, and fanshells to provide group cover.	Hyper-local temperature, humidity, wind speed, rainfall, and sunshine levels Raincoats and fanshell status	A retail startup could build an app that identifies the best locations or times for a pop-up store based on weather patterns. Health organizations could build apps that show residents a jogging route that avoids wind and snow and maximizes sun and interesting views. *These apps could also draw from the mobility sensors to avoid congested areas.*	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Weather data:* Ambience Data, Earth Networks, IBM, The Climate Corporation *People flow:* Ecocounter, Numina, PeopleFlow

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Energy management system (Schedulers) This proposed system of Home, Office, and Building Operator Schedulers would automate energy use to optimize residential, commercial, and building heating, cooling, and electricity systems — reducing energy waste and relying on clean energy while increasing tenant comfort.	Outdoor weather; Aggregate and de-identified data on room temperature and humidity; Energy use by type (e.g., from plug loads, lighting, HVAC); motion or occupancy; ambient light; comfort levels / complaints. *Restricted data (not published for privacy reasons):* Individual measurement , data for the metrics above, e.g. timestamped data about particular plug loads, occupancy detection for particular rooms.	Energy researchers could use this data to compare neighborhood energy usage across a city. Architects and designers could use this information to improve building designs. Regulators could use such information to create a dynamic energy code system based on actual operators instead of design-based models. Climate organizations could create apps to help individuals or households gamify their energy savings (provided users consented to share their data).	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Building Management Systems:* Automated Logic Controls, Johnson Controls, Schneider, Siemens. *Niche Building Analytics Providers* Basking Automation, Comfy, ElevenX, Encycle, Parity, Peak Power, Cortex, Raybased, Sensorsuite, Simptek, Shift Energy, Thoughtwire, Density.io, InnerSpace. *Energy use measurement:* Voltserver, Enertiv, Sense, Wemo, Currant. *Thermostats:* Ecobee, Honeywell, Nest, Samsung, *Smart switches, lighting, appliances, and other hardware:* Lutron, Enlighted, LG, TZOA.

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Building waste management systems To help divert landfill waste, a proposed program of responsive digital signage would help residents and businesses sort their trash, recyclables, and organics (foods) by illustrating common sorting mistakes. "Pay-as-you-throw" waste chutes would support this recycling program while helping to reduce overall waste.	Trash volume, pressure scales (weight), waste classification for sorting (e.g., using computer vision properly de-identified at source), contamination issues (i.e. coffee cups)	An environmental researcher could team up with a fabrication studio to design a more sustainable coffee-cup lid based on disposal habits. City planners could use this information to understand best practices in buildings, to test new systems and strategies to scale to other buildings. Computer vision startups could use information on common recycling errors to design augmented reality apps that could help people classify waste. Environmental groups could design an app that provides feedback to consumers, both residential and commercial, encouraging higher recycling rates.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Smart waste:* AMP Robotics, Anaconda, CleanRobotics, Compology, Enevo, RTS Recycle Track Systems, Rubicon Global, Zerocycle.

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Active stormwater management A proposed active stormwater system would rely on green infrastructure and digital sensors to to retain stormwater, reuse it for irrigation, and empty storage containers in advance of a storm to avoid combined sewer overflow.	Stormwater tank level, stormwater flow meter, total suspended solids, valve and gate status, underwater water-quality near shore.	Environmental researchers could design an app to determine the amount of plantings and greenery needed to reduce stormwater flows and the need for secondary treatment. City planners could use this information to better plan (and minimize) hard infrastructure needs for stormwater, such as tanks and treatment facilities. Open data integrations could add this information to the measurement and publication of open stormwater data currently gathered by the city, adding new locations and more frequent updates.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Digital management:* Aquatic Informatics, IBM, Innovyze, Opti, Parjana, RainGrid, Suez, Veolia North America. *Water quality:* Acoubit, FREDsense, Orb, Xylem, ZwitterCo.

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Flexible retail platform **(SeedSpace)** A proposed leasing platform called SeedSpace would help small businesses and other retailers book a wide range of ground floor space sizes, from anchor-tenant spaces to micro stalls, for short- or long-term uses.	Footfall and rate data (e.g. non-personal, aggregate lidar / radar), space size, availability, aggregated tenant turnover rates (aggregated and de-identified)	A retail startup could create an app that determines the best times of the year or day for an entrepreneur to set up in the area. *This could also draw on hyperlocal weather data from the outdoor comfort system.* An economic development firm could conduct (or have a startup create an app to conduct) retail industry analyses of neighbourhood turnover rates by size of space. Business Improvement Areas could use this data to understand the economic impact of events or policy decisions.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Location mapping:* Innerspace, MappedIn *Space mapping:* A Retail Space, Chatter Research, Potloc *Space availability:* Booqd, Breather, Harbr, Piinpoint

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Public realm maintenance map A proposed real-time map of public realm assets — from park benches to drinking fountains to landscaped gardens — would enable proactive maintenance and keep spaces in good condition. Draft for discussion purposes only	Evapotranspiration, plant health, moisture, waste bin volume Air quality, decibel meter (e.g. only volume level, not recording audio) Public realm asset location, usage, damage detection	Software developers could use this information to create automated maintenance services, such as precision agriculture systems or landscaping bots. Industrial manufacturers could use data on utility maintenance to identify more durable materials or component designs. City officials, business improvement districts, and others could this information to better schedule core operations, such as waste collection or green-space watering, to lower costs and improve quality of life. A parks researcher could use this information to understand the average use of expensive equipment like kayaks to inform inventory procurement decisions. City planners could use this information to understand the use and benefits of new equipment pilots.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Physical asset location:* Bench Mark, BeWhere Inc., Estimote, Tekt. *People flow:* Eco-counter, Numina, PeopleFlow. *Autonomous equipment:* BigMow, Husqvarna, Kobi. *Predictive maintenance:* AI Incorporated, Arable, Mero Technologies, Nanophyll, Opti, Plantix, Sensoterra.

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Open space usage and management (CommonSpace) A proposed digital application called CommonSpace (created with the local organization Park People and the Gehl Institute) would make it substantially easier, faster, and less expensive to collect more reliable data on how people use public spaces — helping park operators better respond to community needs.	Gehl public realm activity categories, usage counts (aggregated and non-personal), demographic details (extremely high-level and thus non-personal)	City planners, community groups, and others could use this information to research park spaces and equipment that show the highest use in different parks throughout the city. Community-based groups could develop planning apps and tools that allowed community members to better suggest park uses for all ages and abilities in their neighborhoods.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Open space management:* Range of government, non-profit, and community groups *Park operations:* Gehl Institute and other urban planning and design groups *City operations:* MySidewalk, Namara, Stae, and other platforms supporting city operations insights

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Core Digital Services That Others Can Build On

Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Outcome-based building code This proposed real-time building code system could monitor noise, nuisances, and structural integrity to help a mix of uses thrive without sacrificing public safety or comfort.	Strain gauges, vibration, odor, sound pressure, decibel meter (e.g. only volume level, not recording audio), lead detection. Safety sensors: Sprinkler pipe pressure, fire pump diagnostics, emergency lighting diagnostics, heat, smoke, CO_2, CO PM 2.5, PM10, VOC.	City government could use this information to develop new outcome-based regulatory systems for code compliance. City planners could use this information to develop new outcome-based zoning standards. Planning researchers could use this information to study the relationship between mixed-use development and local economic growth. City agencies or architectural groups could create apps to visualize building structural integrity issues.	*(Names are illustrative only and do not imply partnerships or endorsement.)* *Environmental collection:* Aclima, AQMesh, Awair, Concrete Sensor, Fibos, Koto Labs, Noiseaware, SafeHub. *Building outcomes mapping:* Black Arcs, Ratio City, Map Your Property.

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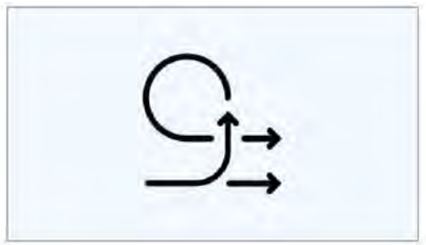


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Building Innovation: Objectives



Flexibility / Adaptability

Create structures that are more responsive to the needs of its users over time, both on Day 1 and years later



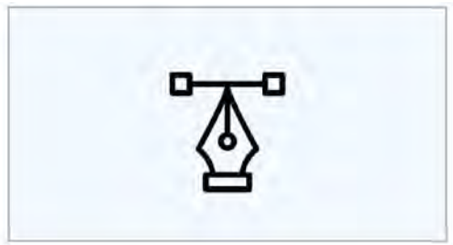
Cost Reduction

Reduce the cost & speed of construction by leveraging scale through a manufactured approach to buildings



Sustainability and Wellness

Build at the highest sustainability standard which positively impacts the environment, lowers cost of utilities, and improves the occupants' well-being



Design Excellence

Innovative building design and architectural excellence on the waterfront

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Building Innovation: Phases

01

Identification of Technology

Explored and identified a series of innovations that make up our strategy for the built environment

02

Proto-Model Development

Developed proto-models to test the integration of specific technologies and variations in design

03

Design & Cost Benchmarking

Commence benchmarking exercise to better understand design and costs of construction based on proto-models

04

Building Design Check

Develop building designs for buildings on Quayside that we will measure against our benchmarks and goals

05

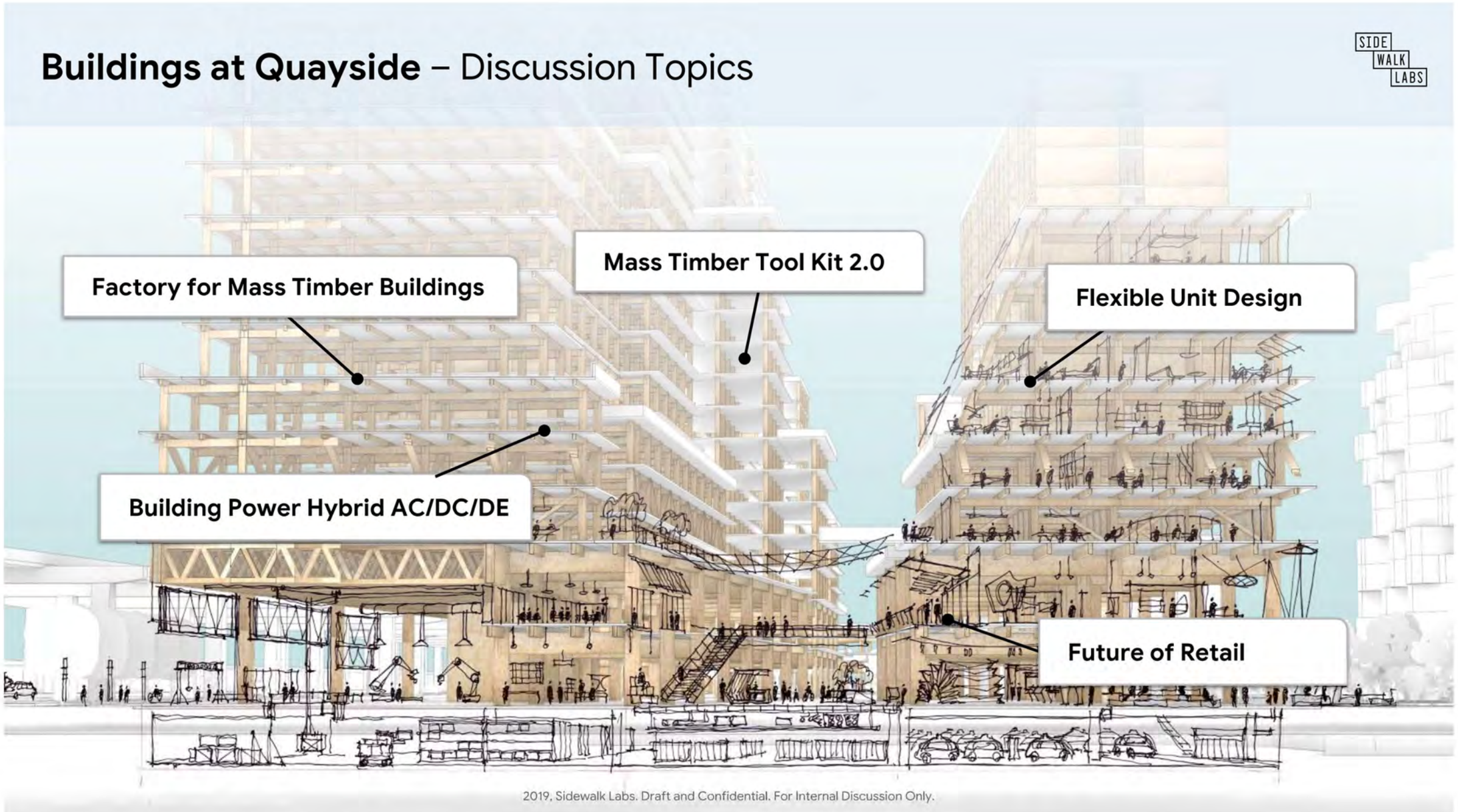
Final Proto-Model for Building Authority Review

Develop a building design with City of Toronto input to address all necessary code and alternative method design proposals.

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Buildings at Quayside – Discussion Topics

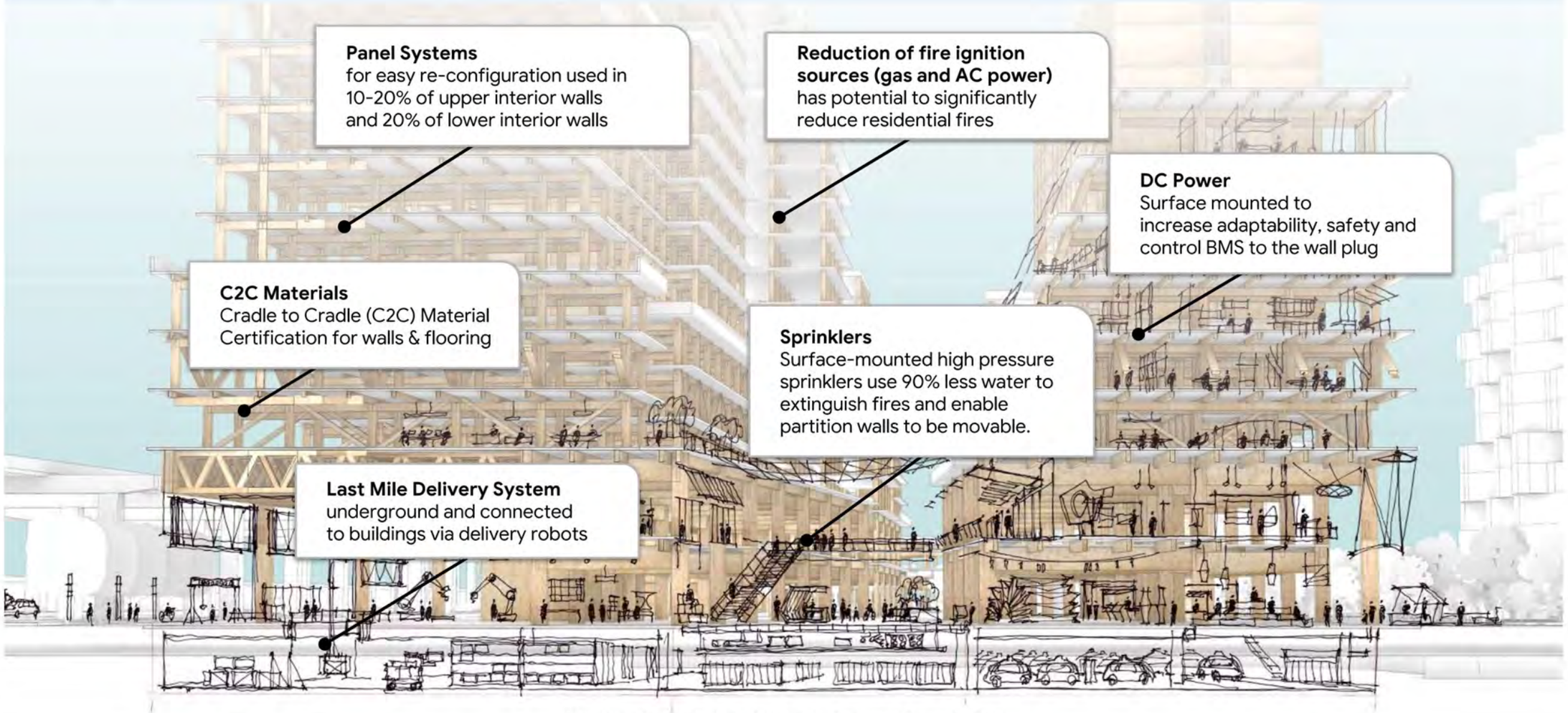


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Building Innovations

Buildings constructed with new materials, technologies and with greater flexibility for diverse uses



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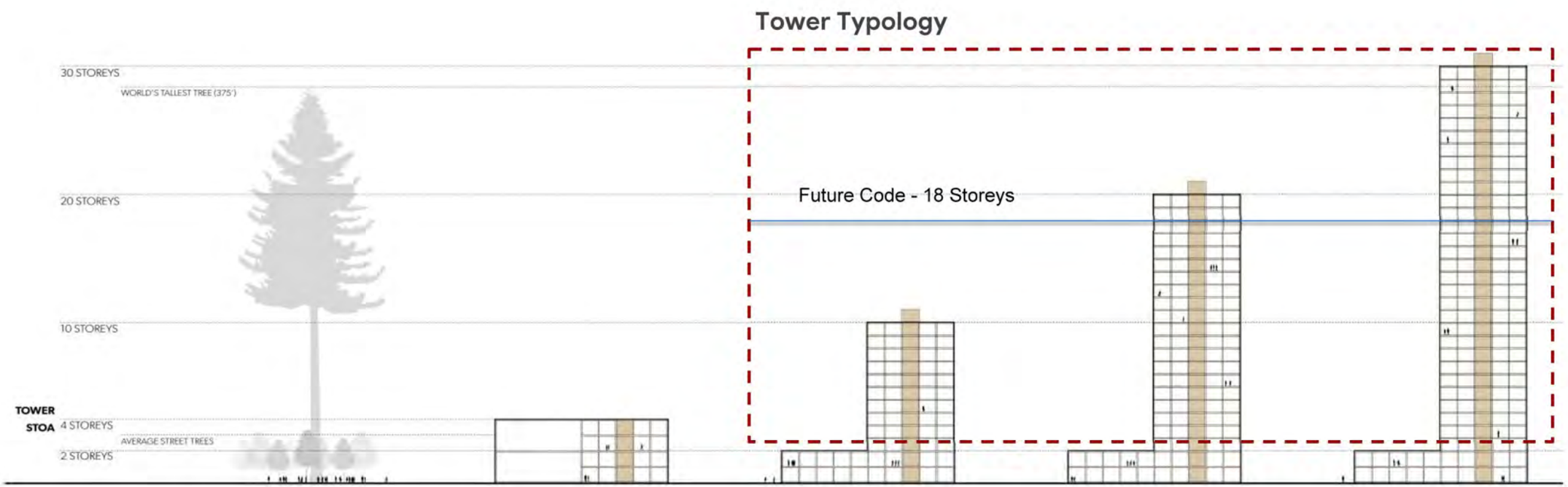


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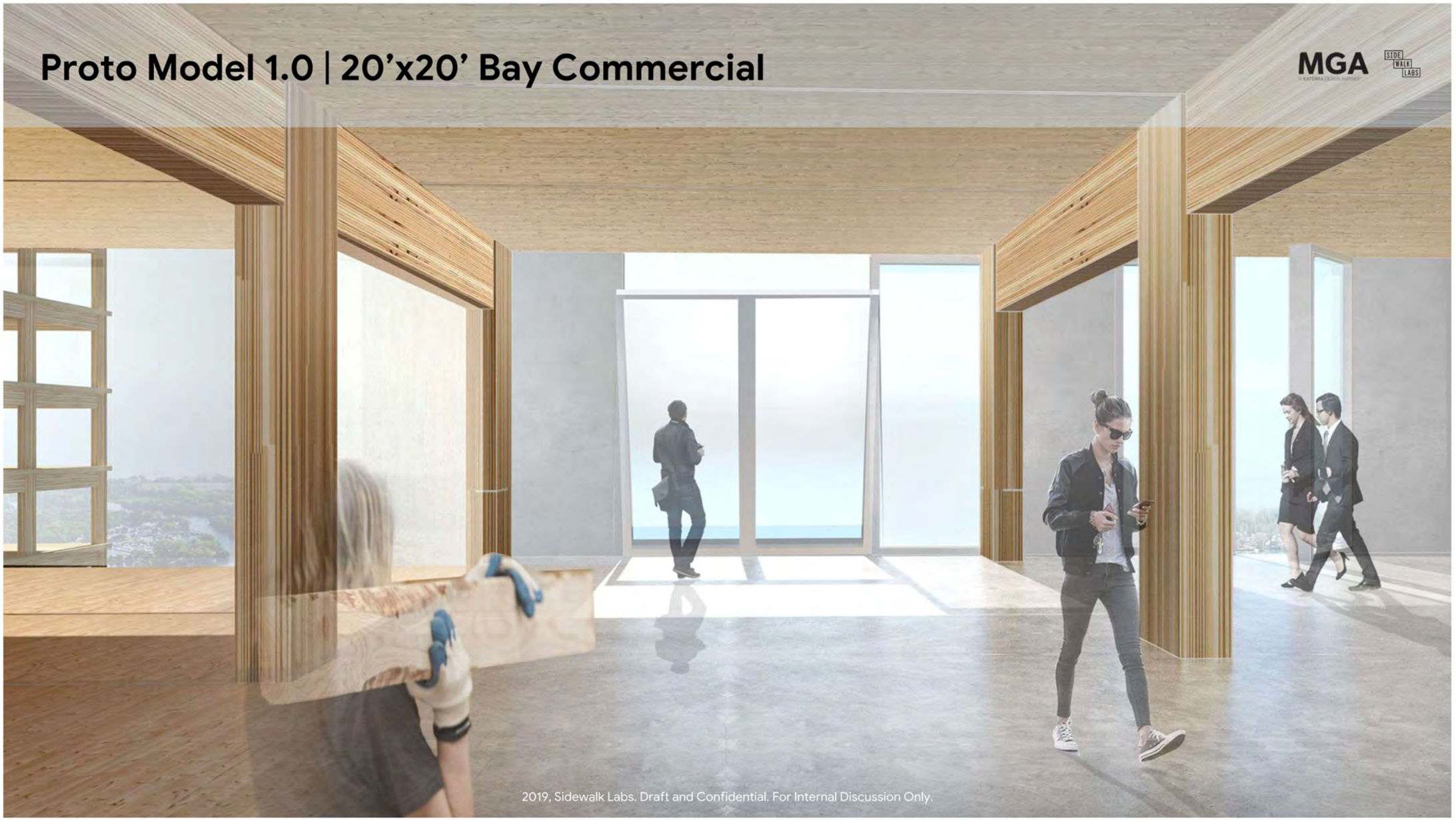
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Proto Model 2.0



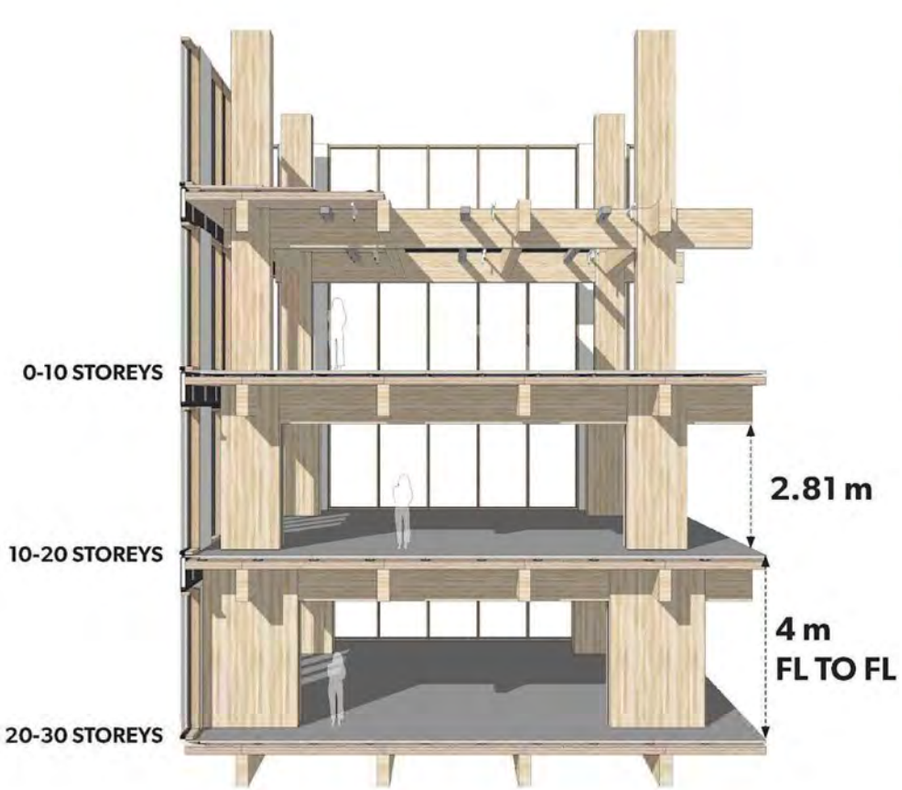
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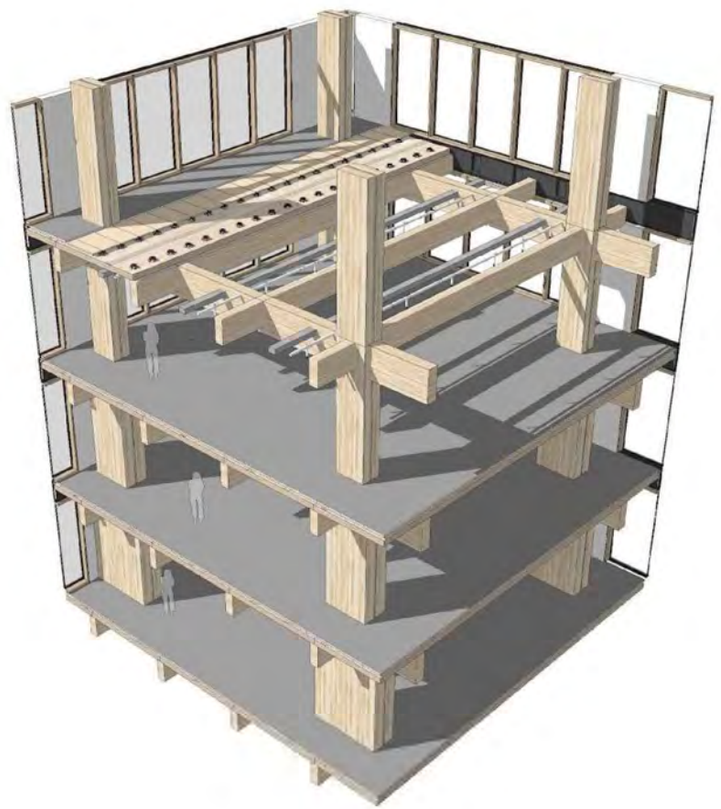
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Proto Model 1.0 | 30’x30’ Bay Commercial

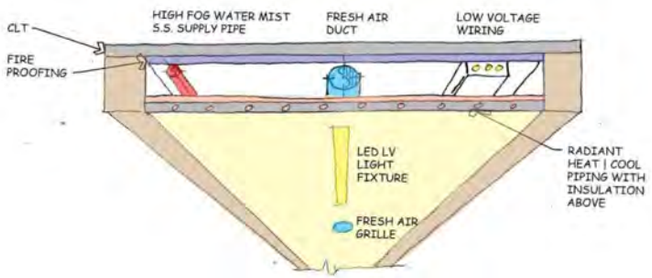




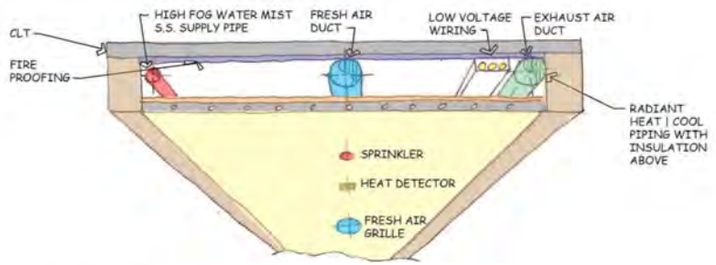
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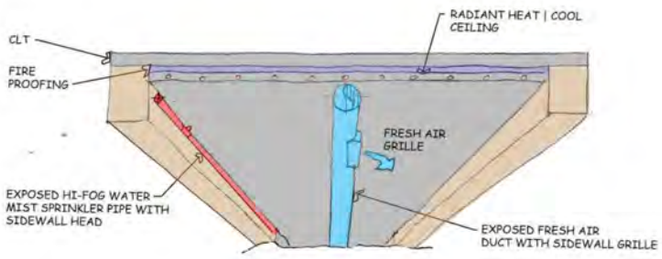
Proto Model 2.0 | Prefabricated Cassettes



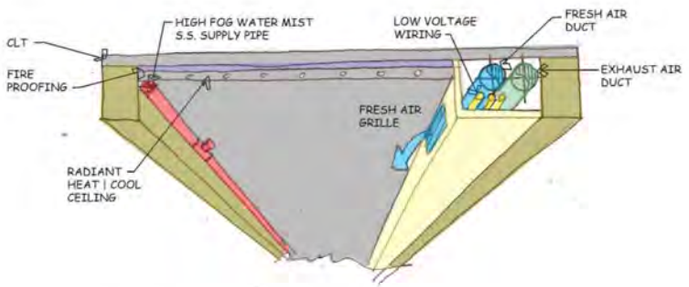
Loft_Flex Cassette with Full Drop Panel Option



Residential Cassette_Full Drop Panel Option



Loft_Flex Cassette_Closed-Coupled Radiant Ceiling Option

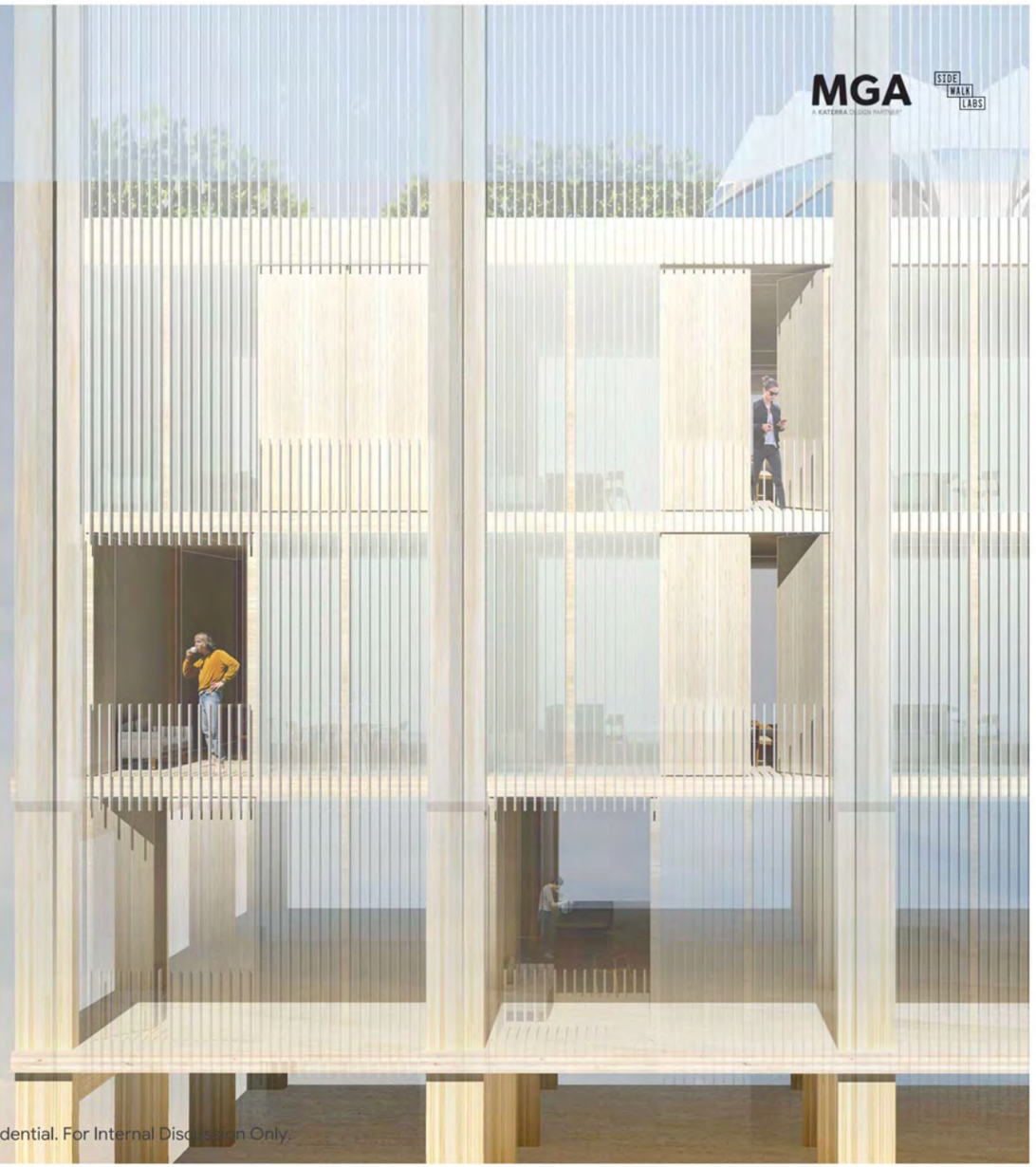


Residential Cassette_Soffit Option

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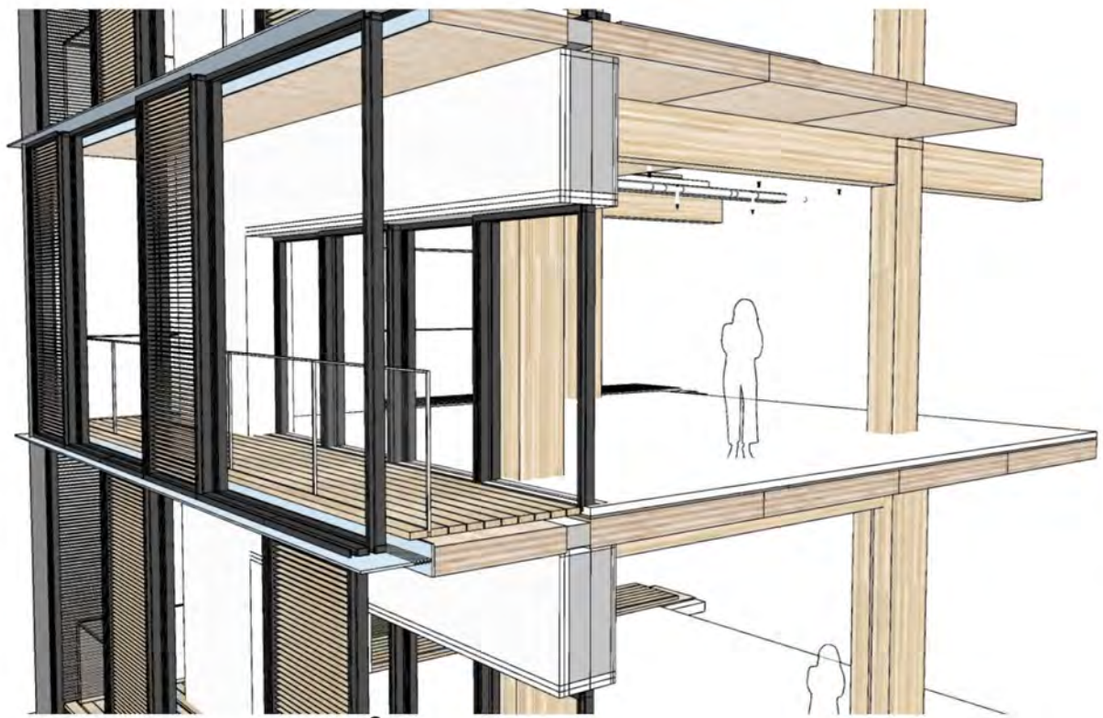
Proto Model 1.0 | Passive Envelope

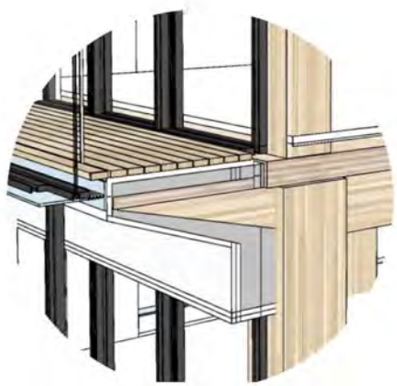


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Proto Model 2.0 | Passive Double Skin





ALT DETAIL

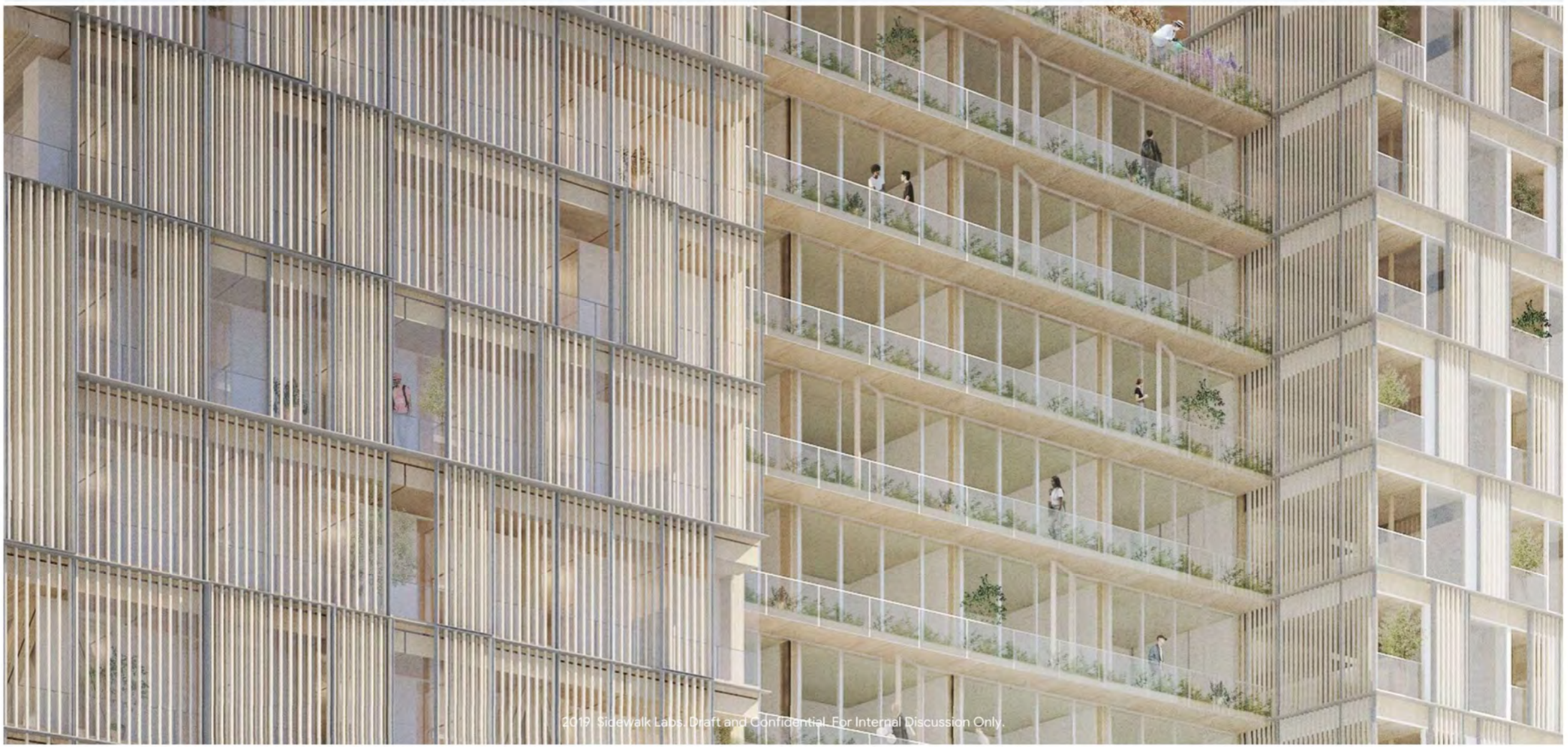
SECONDARY SKIN

PRIMARY ENVELOPE

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Proto Model 2.0 | Passive Double Skin



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Shikkui Plaster - Fire Testing at UL for timber encapsulation





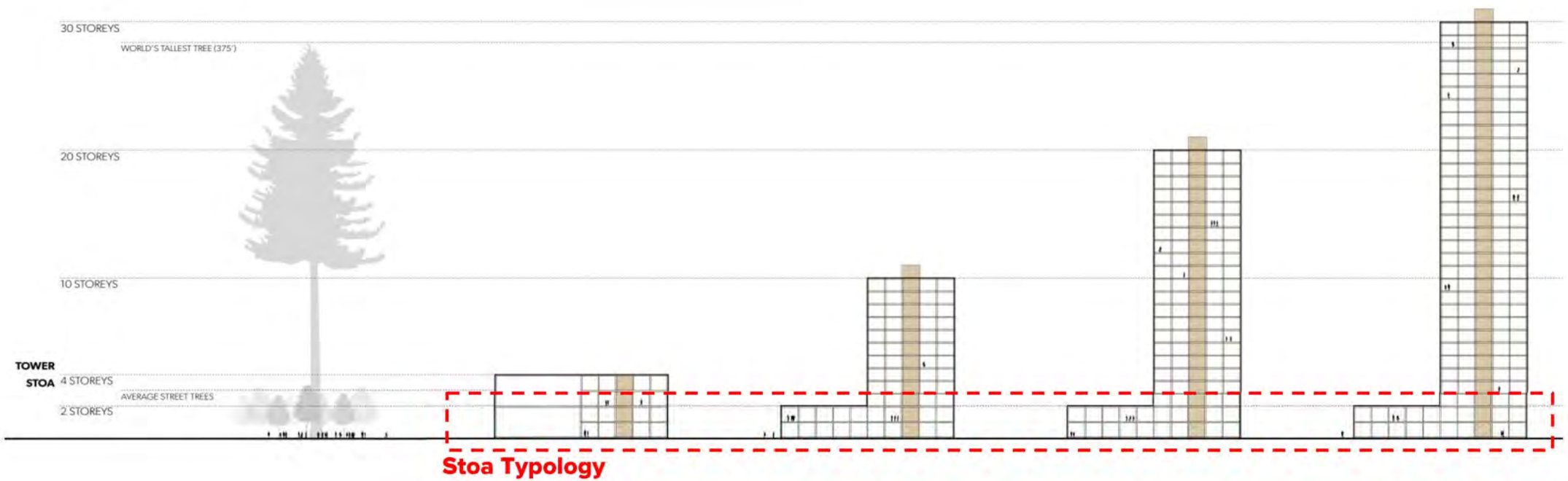
Shikkui Plaster

- Cradle to Cradle Certified
- 1000+ year old product
- Made of slaked lime, seaweed, eggshells
- Antiseptic, hypoallergenic, mold fungus resistant
- Zero VOC
- Waste can be composted or directly mixed in the garden
- Spray or hand applied
- Can be painted and repaired

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Proto Model 2.0

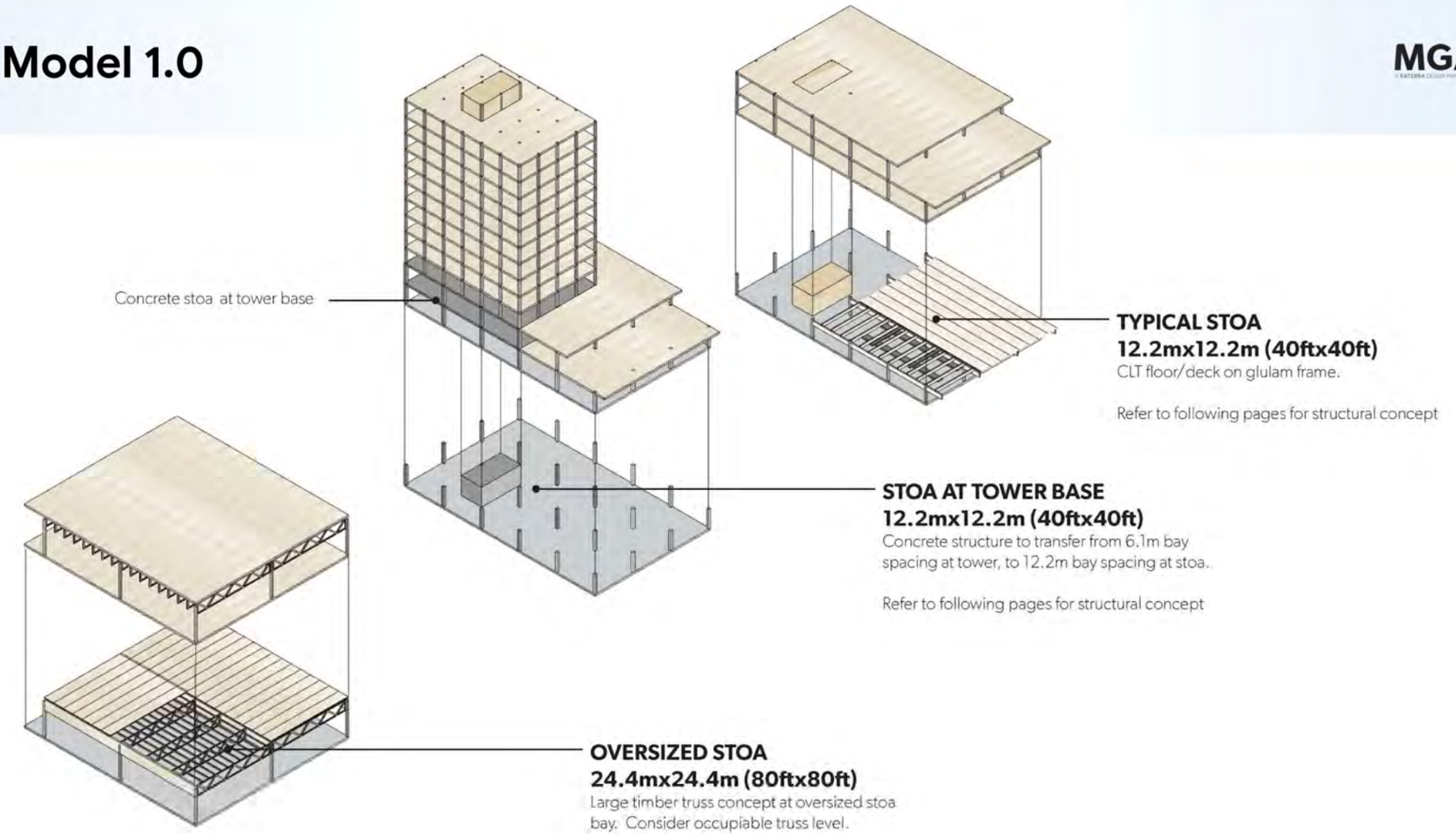


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Proto Model 1.0

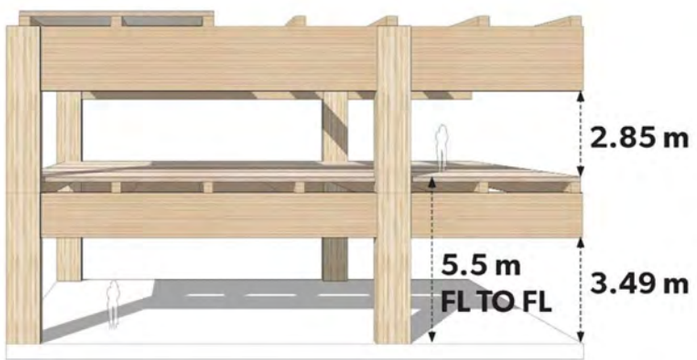
MGA



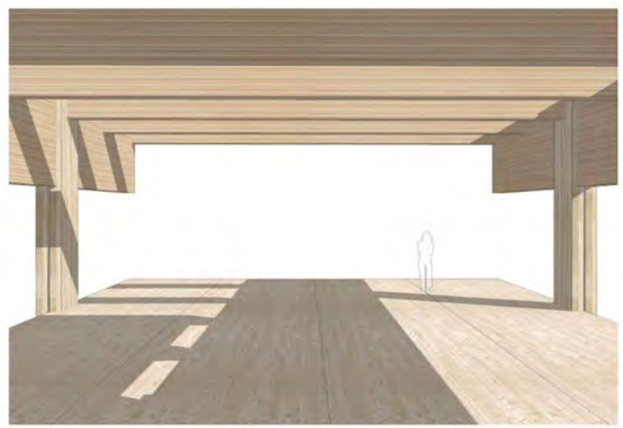
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Proto Model 1.0 | Stoa 40ft x 40ft







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Potential of the Toolkit: Weather Mitigation

Jackman.

SIDE WALK LABS

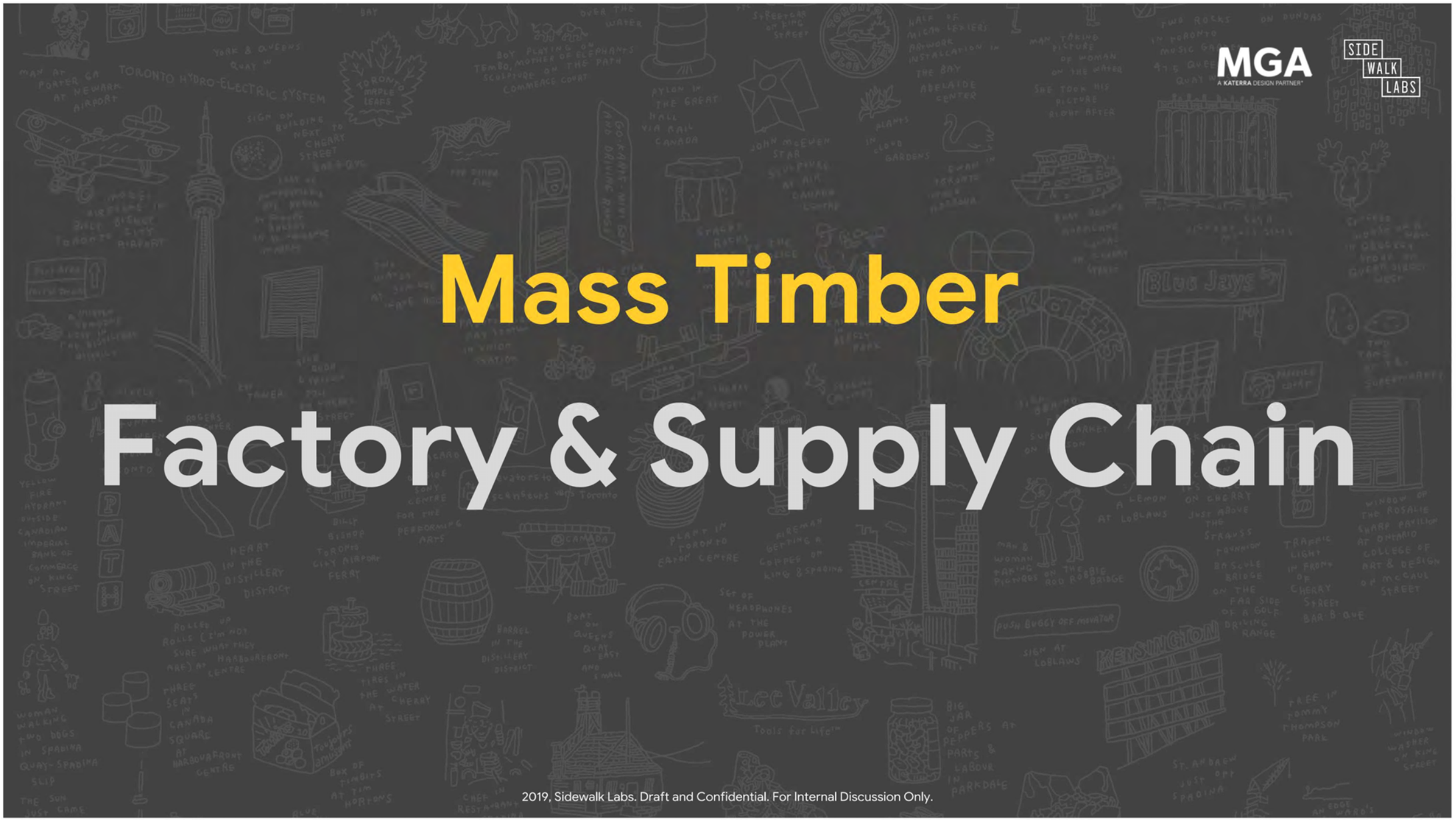






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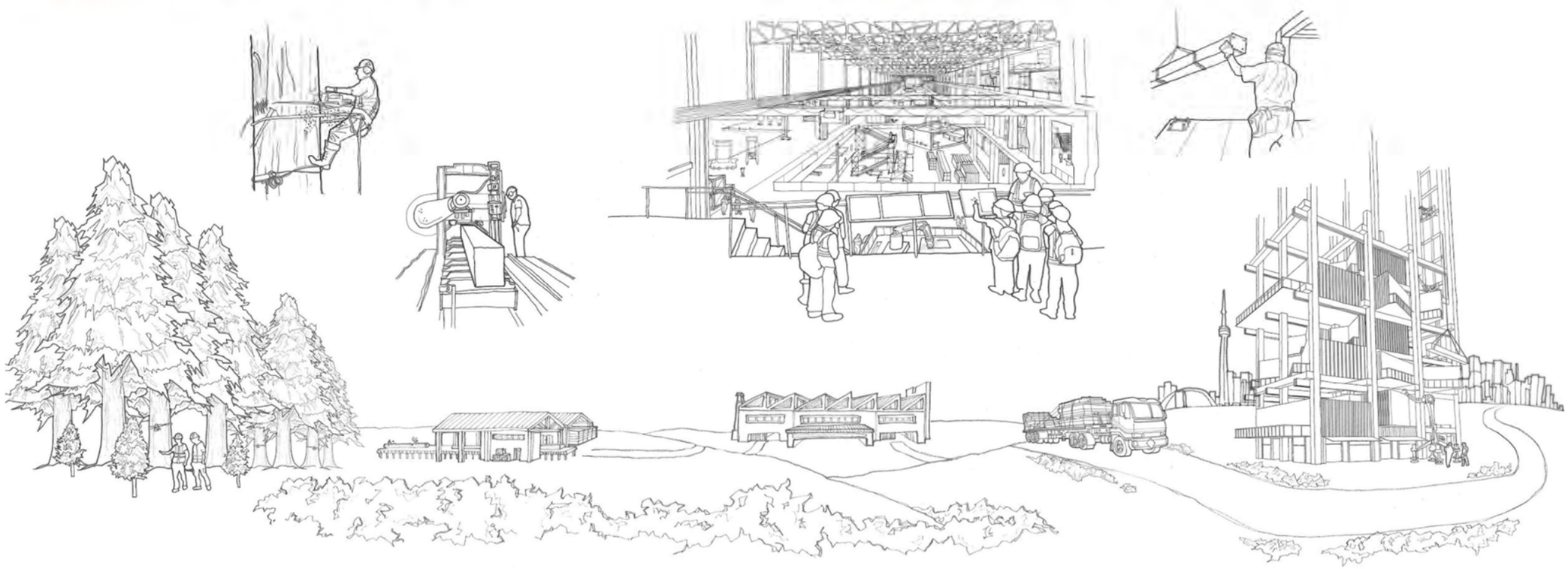
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Factory & Supply Chain - Enabled by an End to End Digital Platform

Canadian Production of CLT & Glulam

500K cubic meters per year

Quayside demand for CLT & Glulam 100K cubic meters



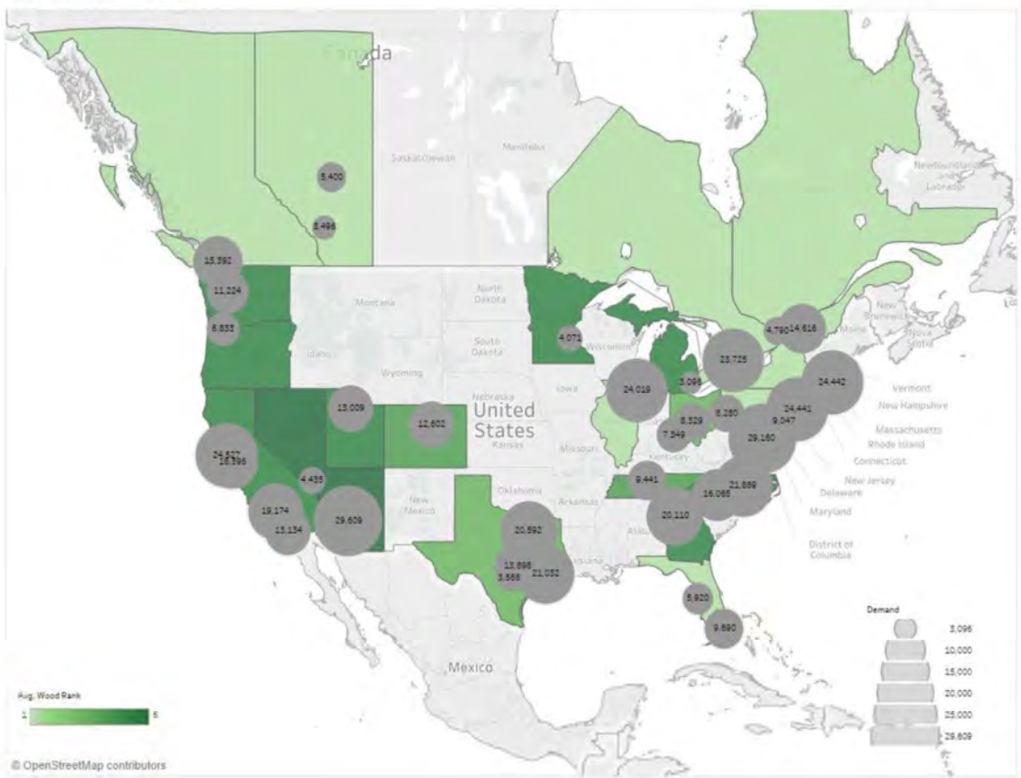
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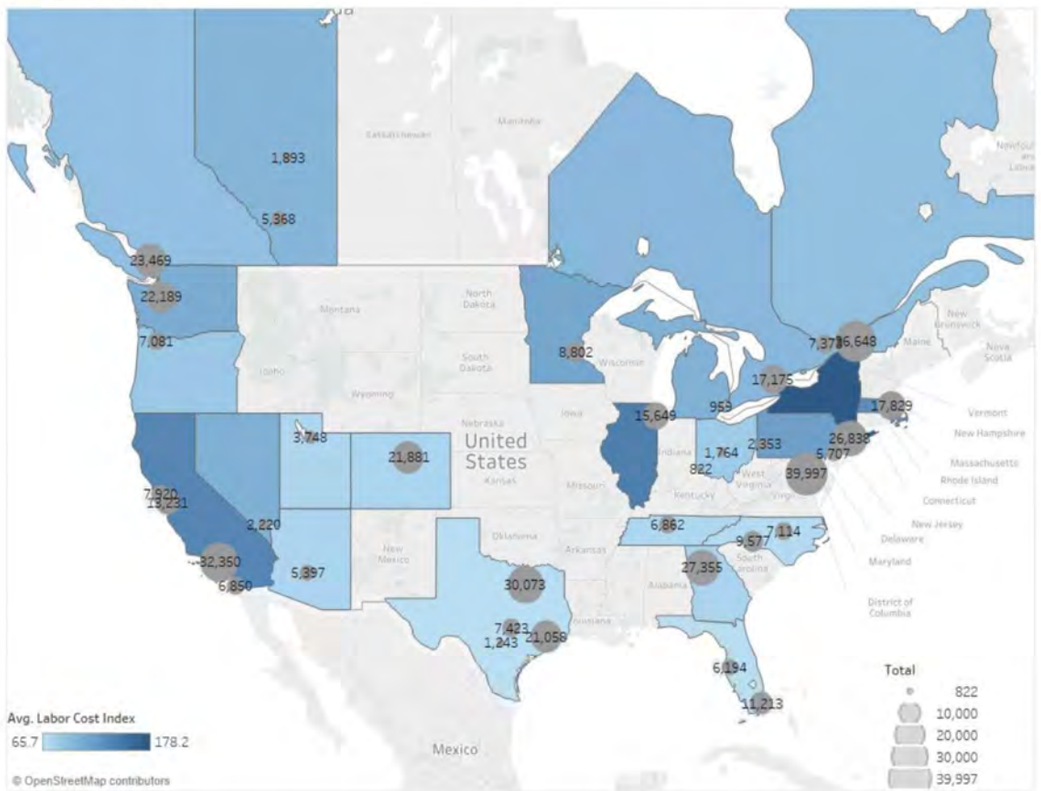
Commercial & Residential Demand for 5 - 29 Story Buildings

15-Year Horizon

Wood Friendliness and Demand for Office Space over a 15-year Horizon
(Demand in '000 sf)



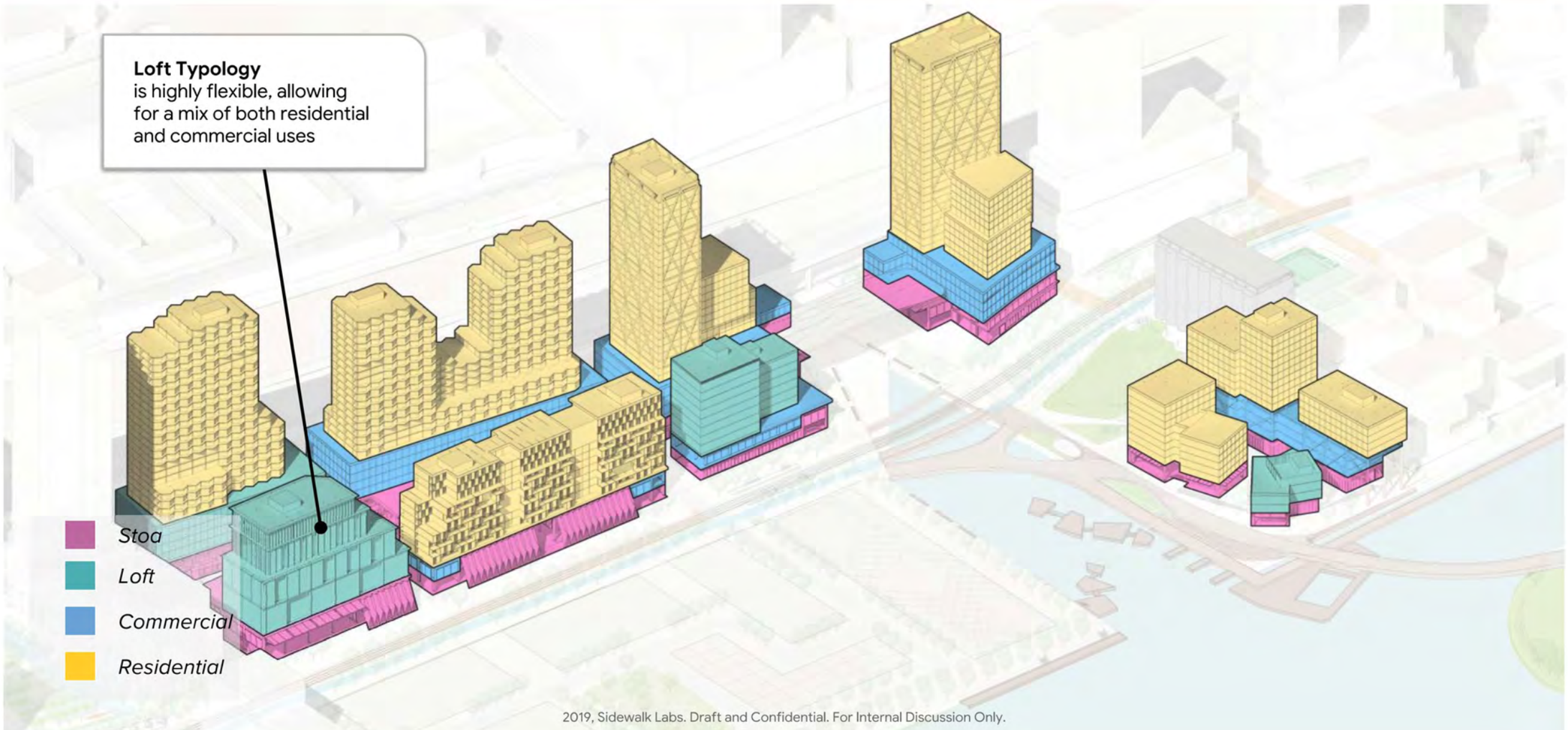
Construction Labor Costs and Multifamily Demand for 5 to 29 stories over a 15-year horizon
(Demand in '000 sf)



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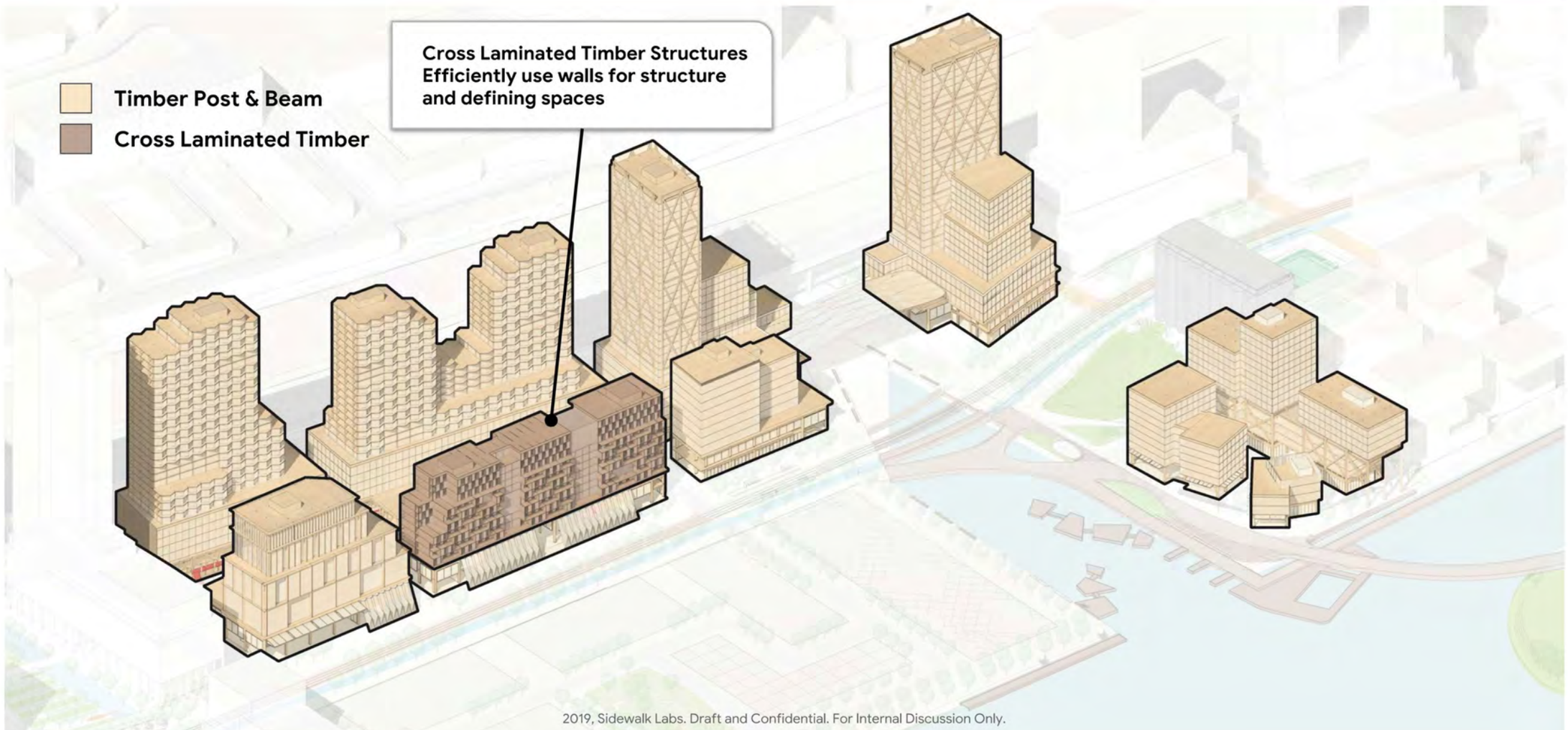
Buildings Include Broad Mix of Uses



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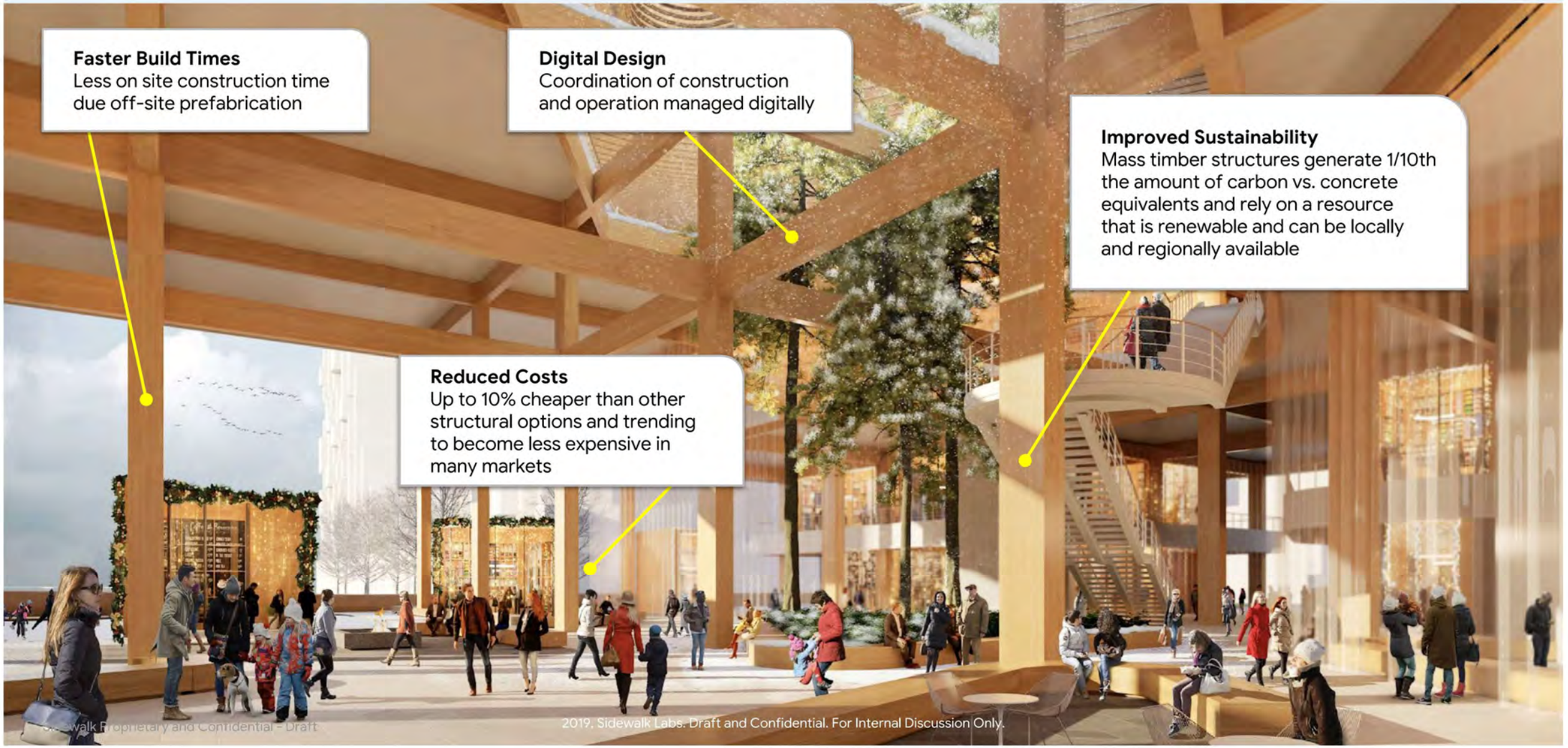
Potential of the Toolkit: Construction Type



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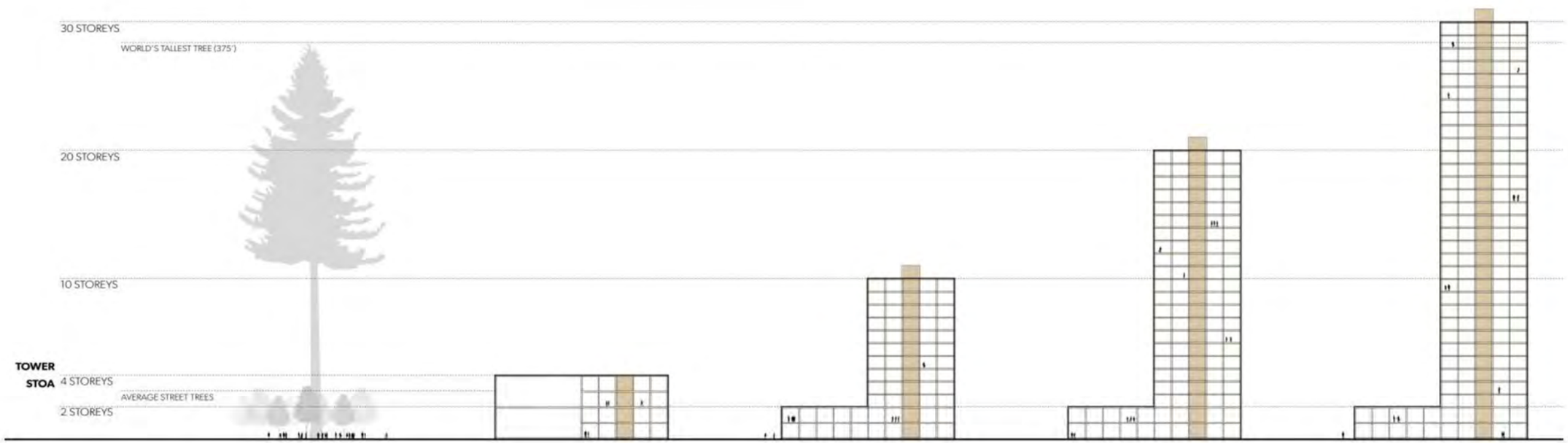
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Buildings Are All Made with Mass Timber



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Building: Use Mass Timber Toolkit



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Potential of the Toolkit: Architectural Explorations







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Buildings: All Parts Are Made Off-site, Resulting in Reduced Traffic Disruption

7x Less Trucking reduces City traffic and site disruption to Quayside neighbourhood.



13.9 km

Concrete
Distance in truck deliveries

2.0 km

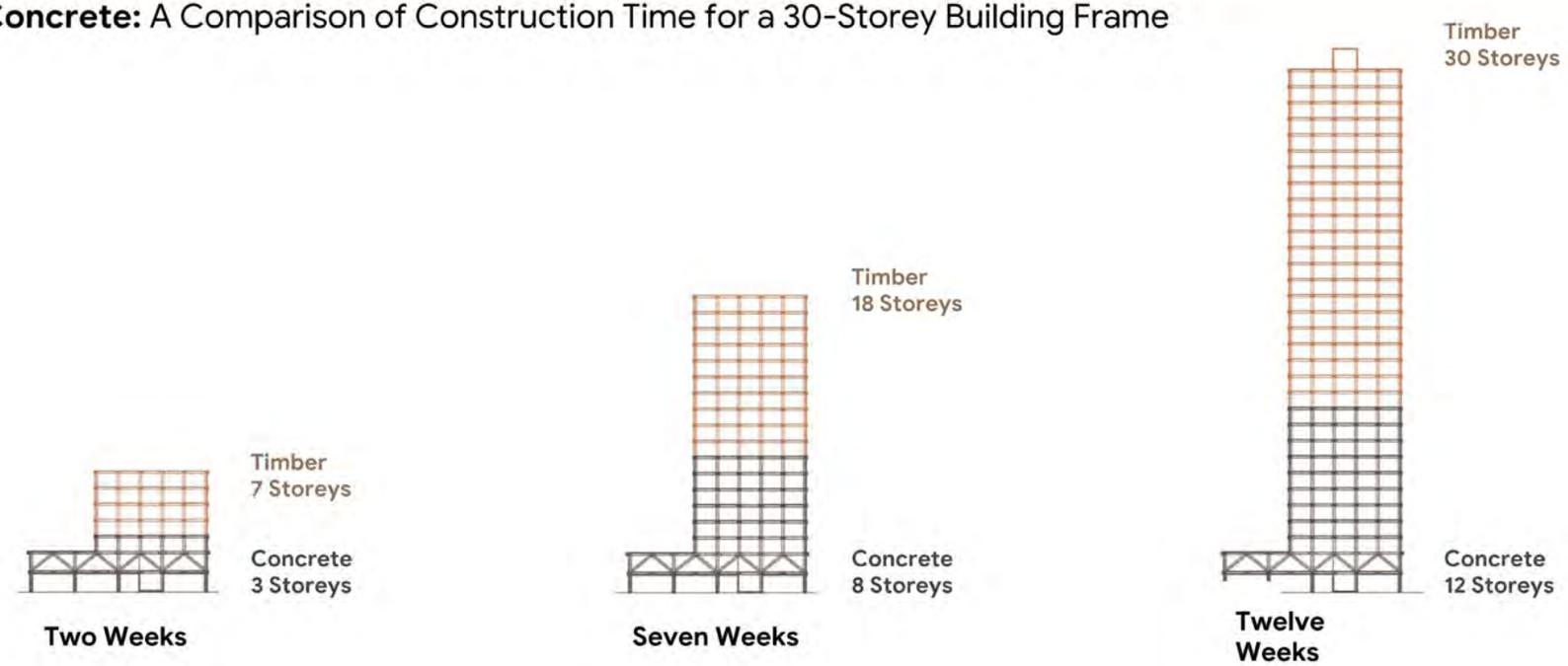
Timber 2.0
Distance in truck deliveries

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Buildings: Accelerated Construction Time Results in Saving 17 Weeks

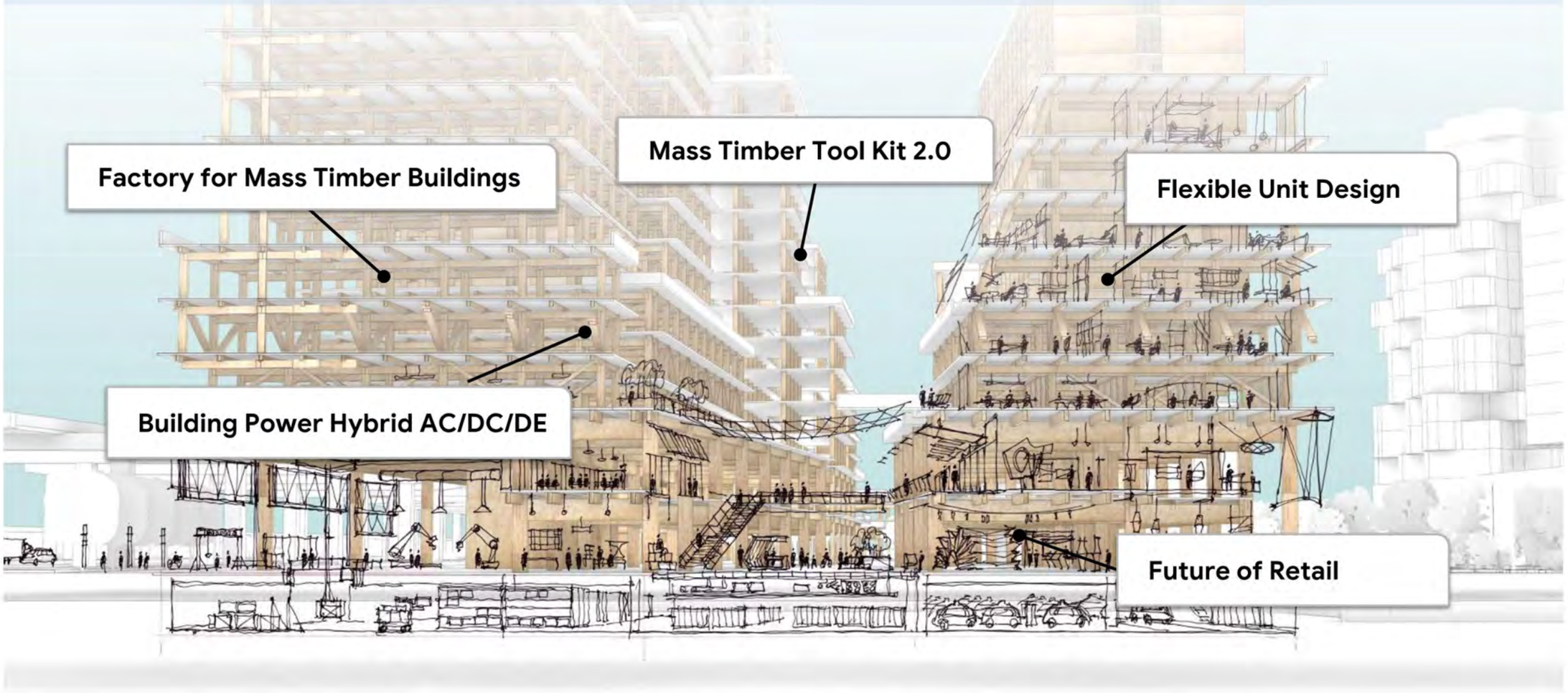
Timber vs. Concrete: A Comparison of Construction Time for a 30-Storey Building Frame





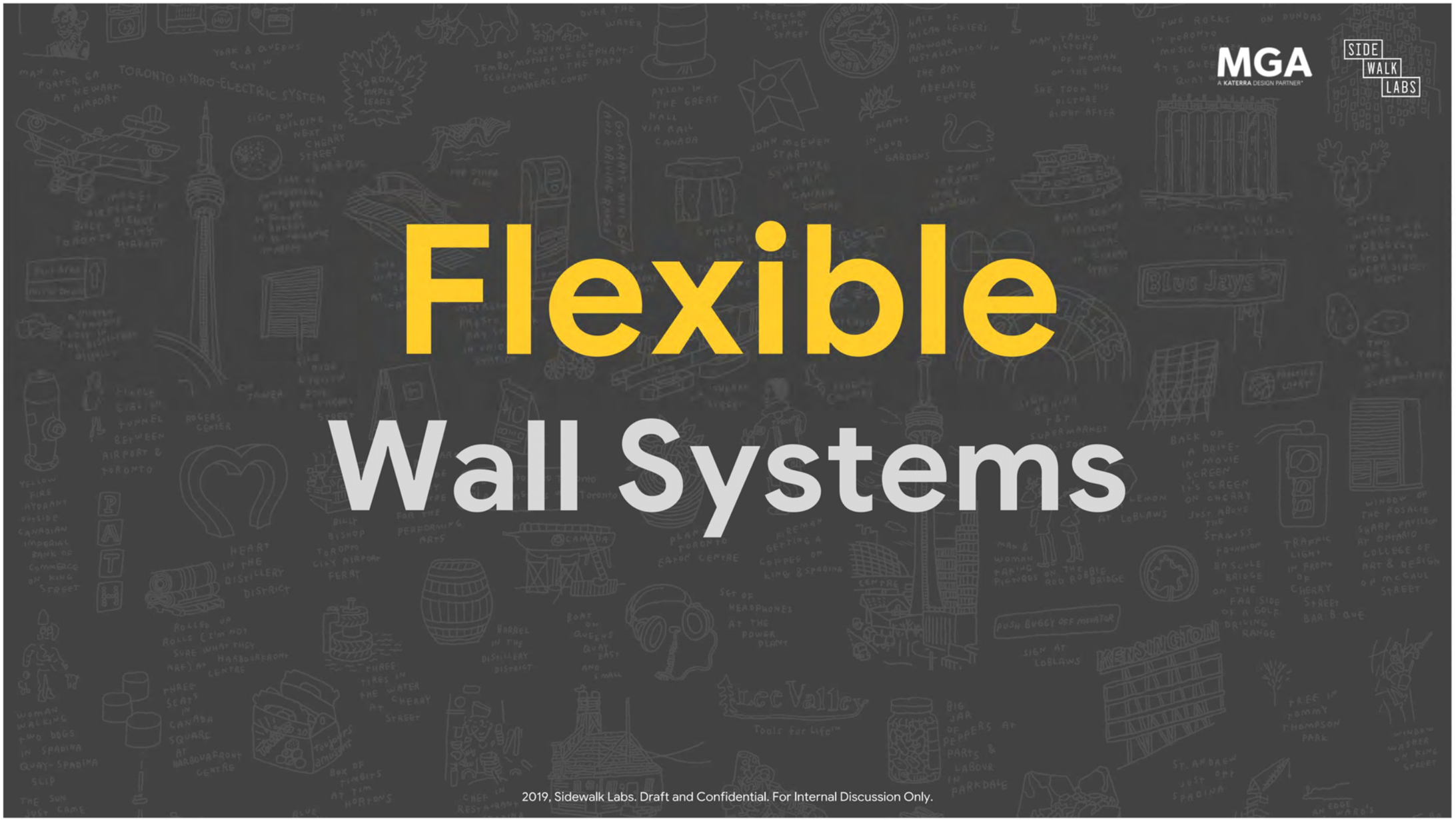
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Buildings at Quayside – Discussion Topics



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What Is Digital Electricity (DE)?

- Electrical distribution using low voltage cabling without conduit instead of thicker, more costly armoured cable
- Addresses More Electrical Hazards: High Current, Ground Fault, Arc Fault, High Resistance, Touch
- Wiring can be run by data cablers, licensed electricians not required
- Simple to add new runs and move existing runs
- Eliminates most circuit breaker panels
- Control, monitoring, metering and fault monitoring & reset of individual circuits
- Policy based load shedding and demand response of individual circuits, dynamically adjustable





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Innovative Digital Electricity (DE) Uses

- Easier wiring of spaces through baseboards during construction and later
- USB-C power outlets throughout, in the future will carry 2,000 watts and power devices more efficiently by bypassing the AC to DC transformers that are in the vast majority of devices today
- Off site construction of power distribution closets
- Automated software control of lights and devices for comfort and cost savings
- Works with both new and legacy devices





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Mist Sprinkler System



OLD: Fabric Fire Blanket



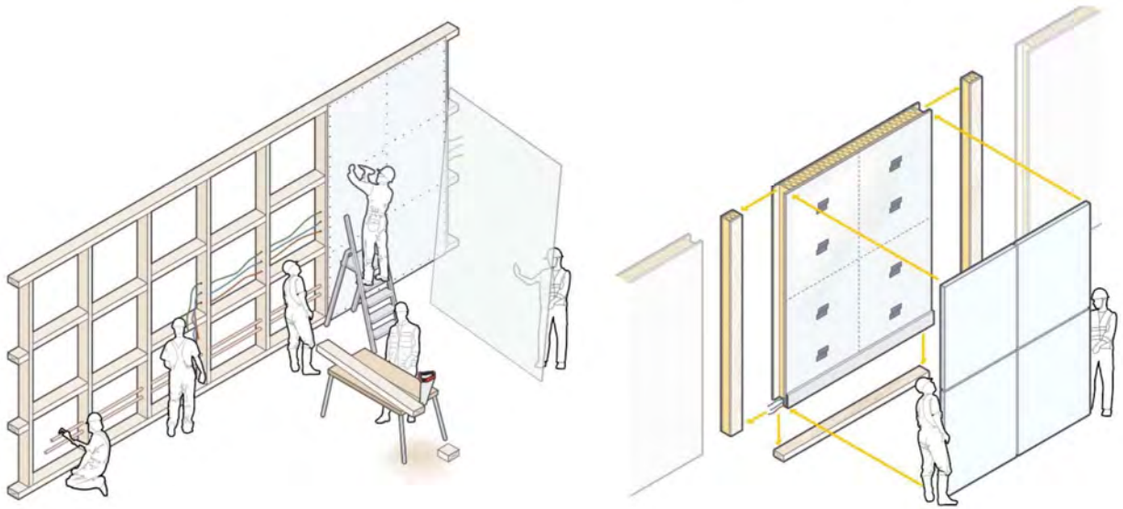
NEW: Mist Fire Blanket

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Flexible Wall Systems in Stoa and Loft

Surface mounted utilities allow walls to be moved as single panels

- DC power is routed through baseboards
- Mist sprinkler tubing is hidden behind architectural channels at ceiling





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What's Standing in the Way?

Looking across industries within retail and f&b to understand pain points, we've discovered that there is undoubtedly a role for physical space, but many things stand in the way:

Launching →	Leasing →	Operating →	Learning →
• Lack of specialized knowledge about typical process	• Onerous lease terms	• Education + retention of front line staff	• Capturing and managing customer data
• High cost due to lack of relationships and scale	• Inflexibility of physical space	• Efficient storage and movement of physical goods	• Transforming data into insight + action
• Timelines for launch	• Insufficient space utilization	• Integration of online/offline channels	• Lack of communication among retailers
		• Store Operations	
		• Back office support	

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What Have We Learned?

Small Players
(start-ups, digital-only businesses, small shops)
want low cost of entry

- Easy and fast design and build out and space modification
- Turn-key operations so they can focus on their product and the customer
- Flexible, de-risked costing to reduce financial burden
- Access to assets/equipment without upfront capital expenditures
- Ability to quickly modify a space
- Ability to offer something competitive

Large Players
(multi-nationals, large regionals, and big brands)
want dynamic and accessible R&D

- The ability to adapt and learn quickly
- Customer engagement to gather insight and develop meaningful relationships
- An environment where failure is allowed and customers accept that it might not work perfectly

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Affordability by Design

1 **Design new typologies** that keep pace with shifting demographics and set new standards for efficient, sustainable lifestyles

2 **Lower cost of construction** through modular and other new building technologies

3 **Capture efficiencies** and pass on some value to residents through policy and/or financial innovation



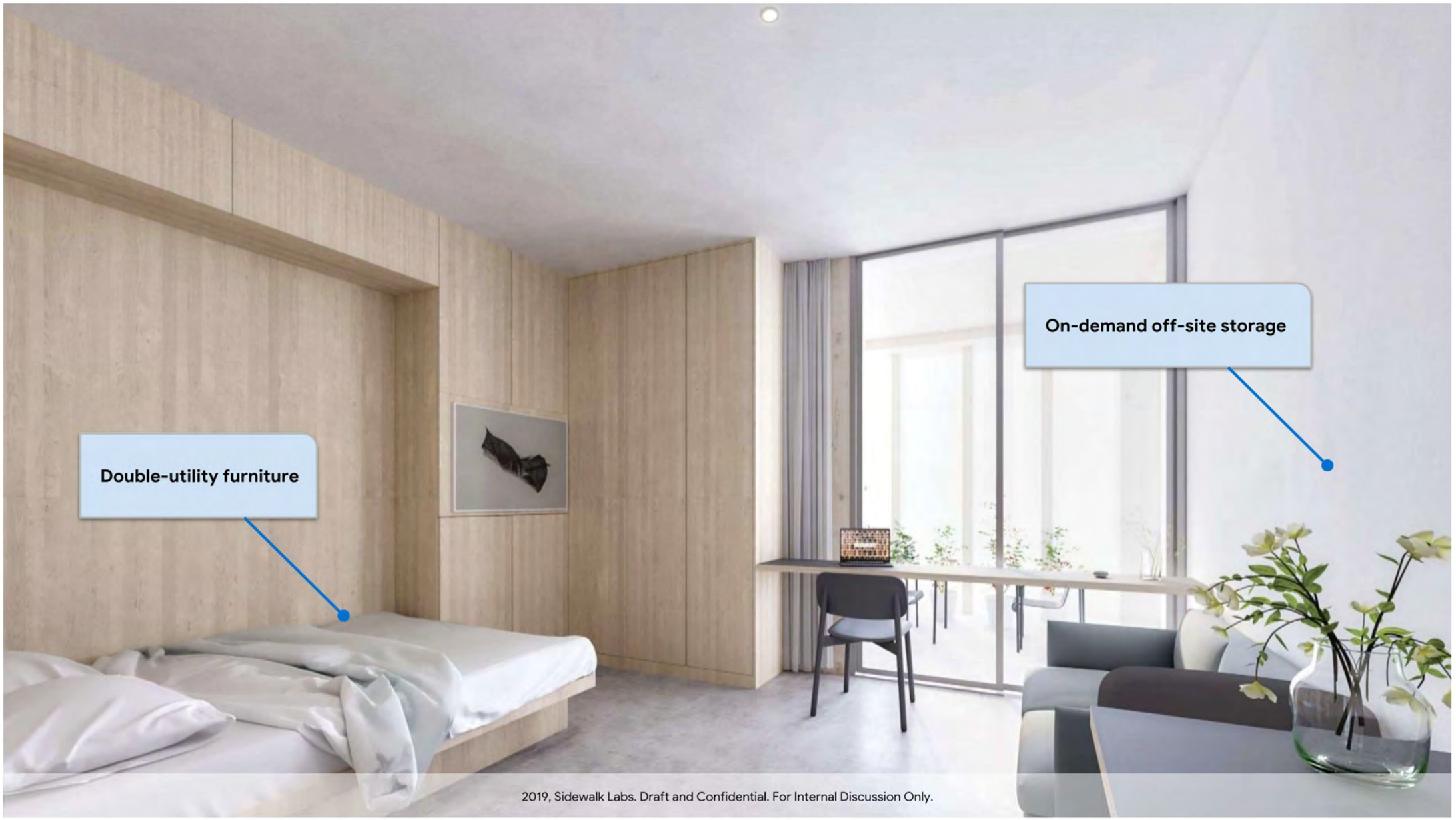
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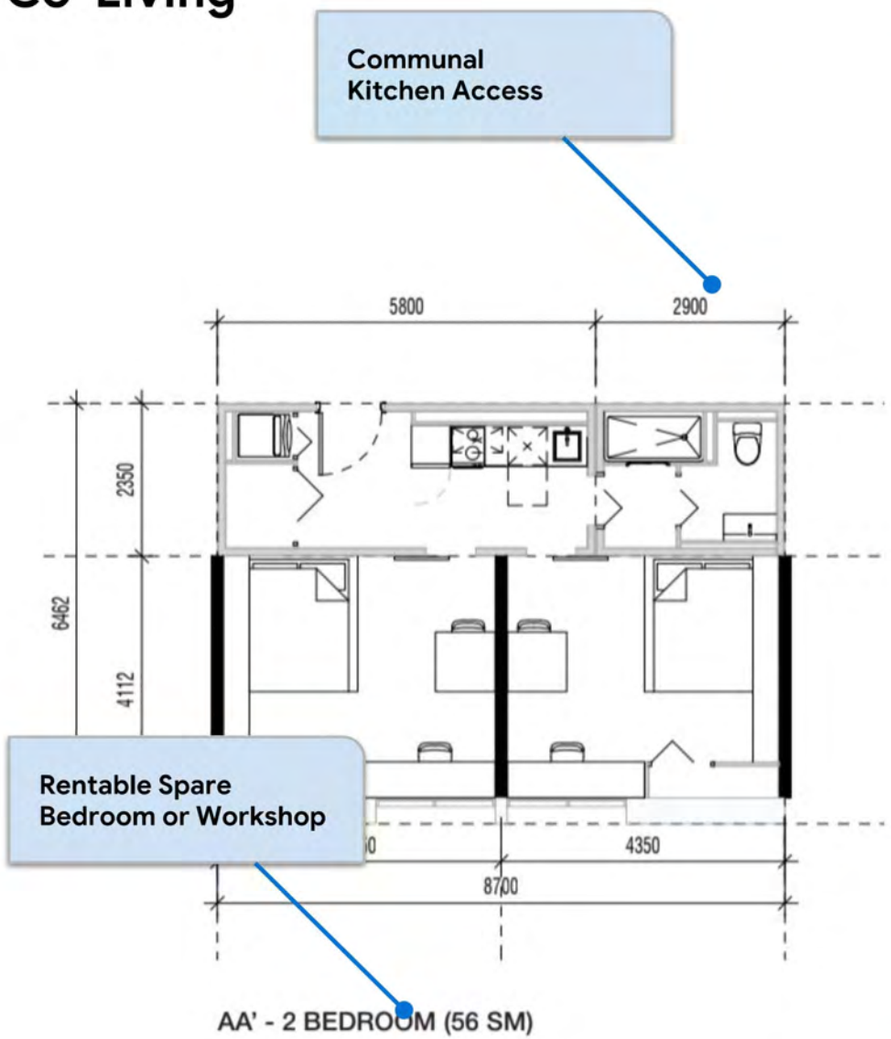
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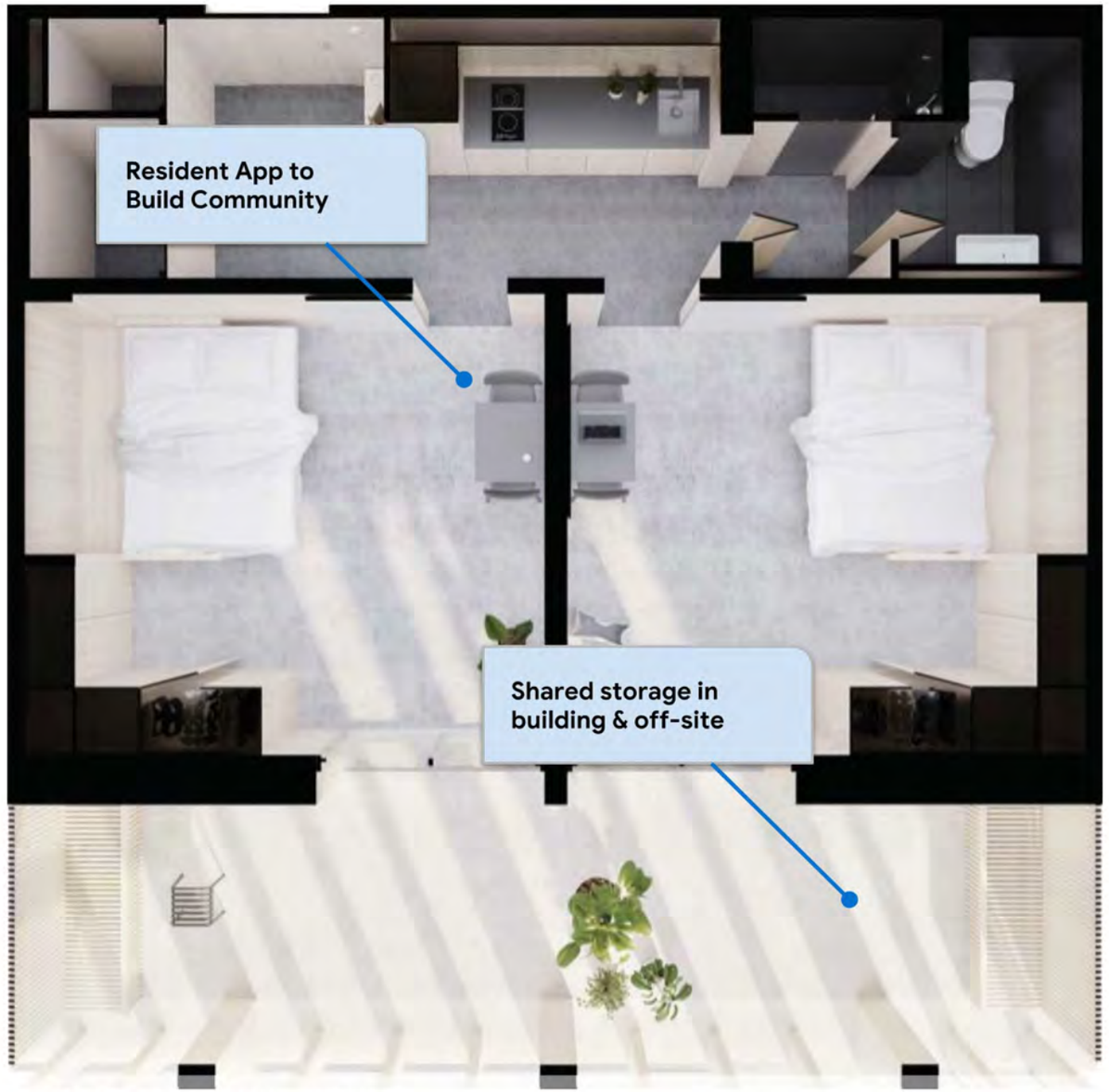


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HOUSING UNIT DESIGN & TYPOLOGY

Co-Living

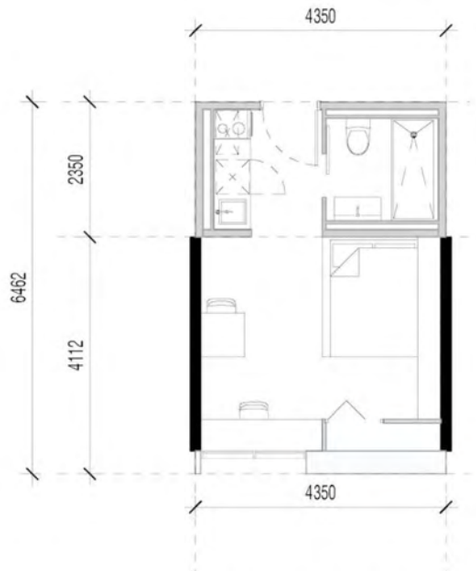




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Unit Plans: Home for a Student / Professional



A' - STUDIO (28 SM)



A home for a student or working professional



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Unit Plans: Student / Professional / Elderly / Couple



BB - 1 BEDROOM (37 SM)



A home for a student, working professional, elderly individual, or couple



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Unit Plans: Two Individuals, 1-Child Family, Couple



BBB - 2 BEDROOM (56 SM)



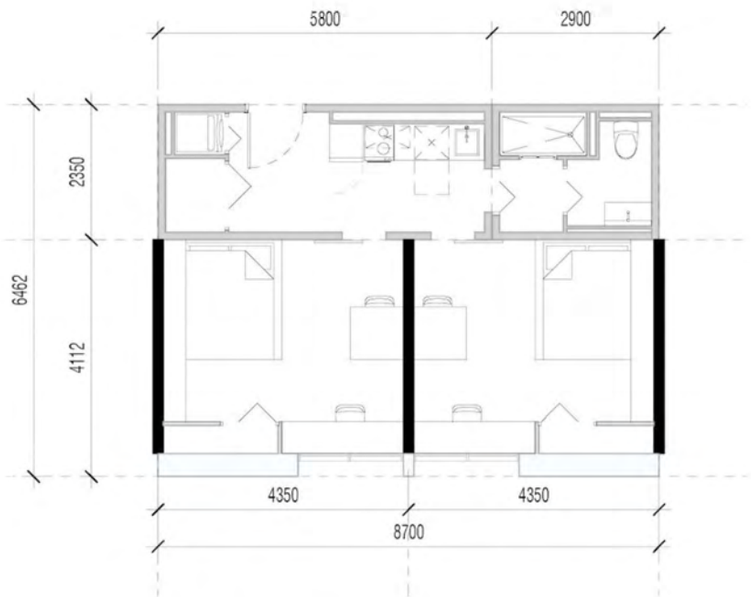
A home for two individuals, a 1-child family, or a couple



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Unit Plans: Larger Kitchen, Bathroom, W/D



AA' - 2 BEDROOM (56 SM)



A home with a larger kitchen, bathroom, and washer/dryer for two unrelated individuals



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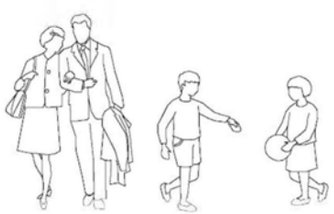
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Unit Plans: 3 or 4-Person Nuclear Family



AA' B- 3 BEDROOM (75 SM)



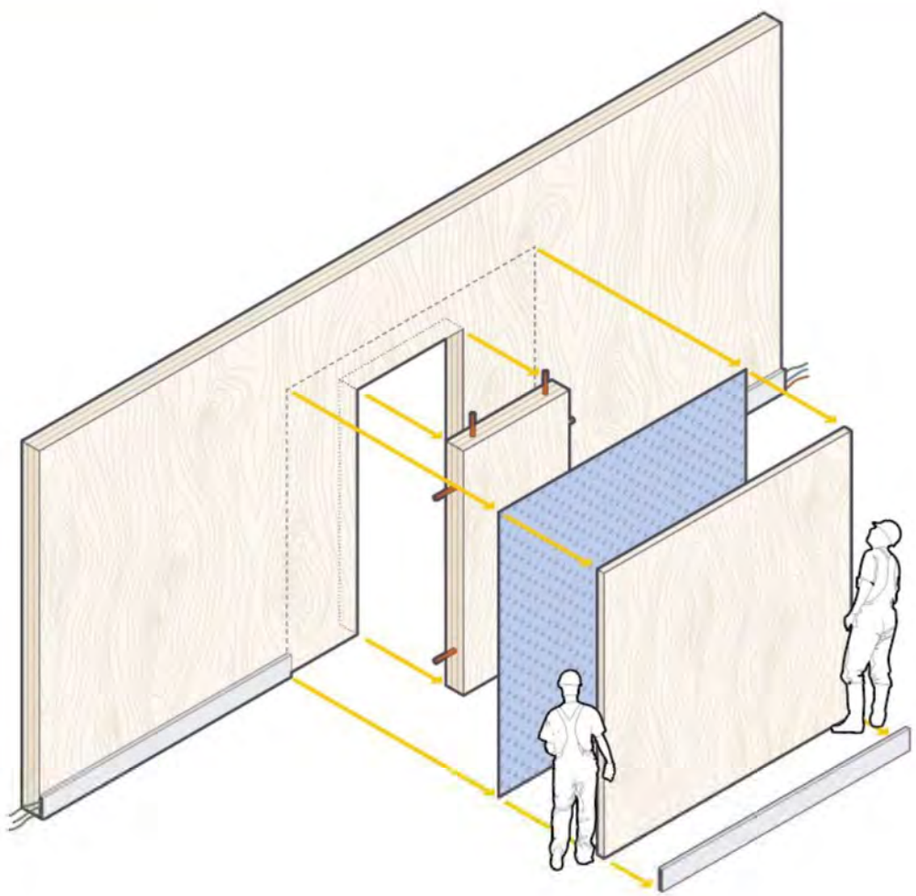


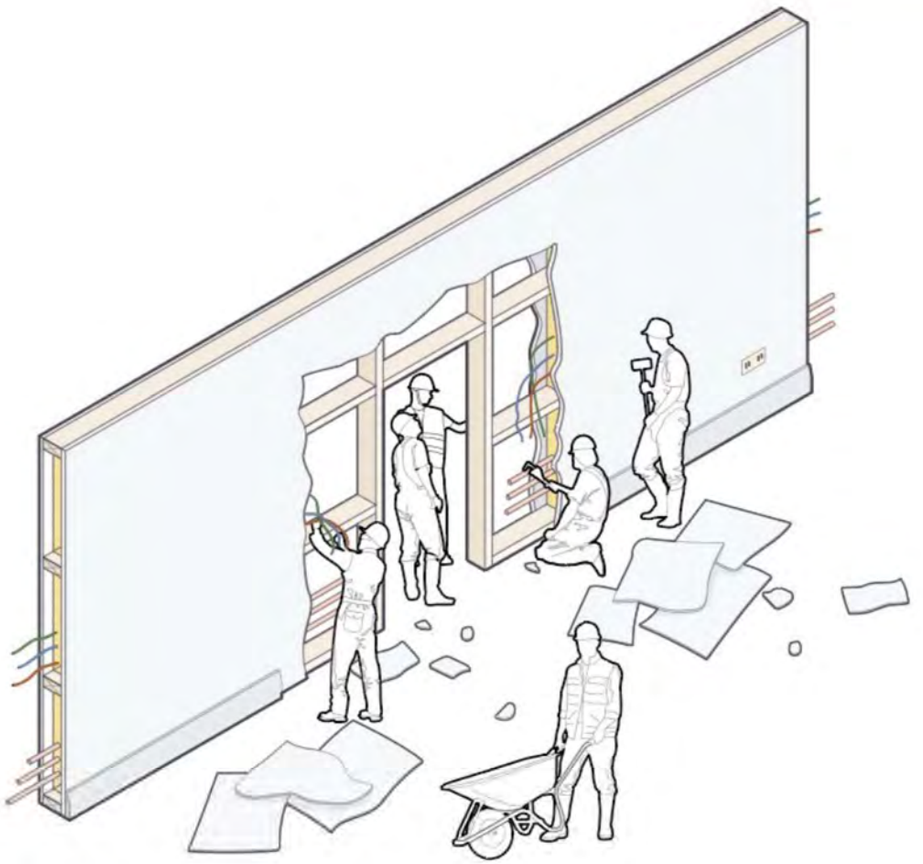
A home for a 3 or 4-person nuclear family

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Building: Flexible Walls (Residential)





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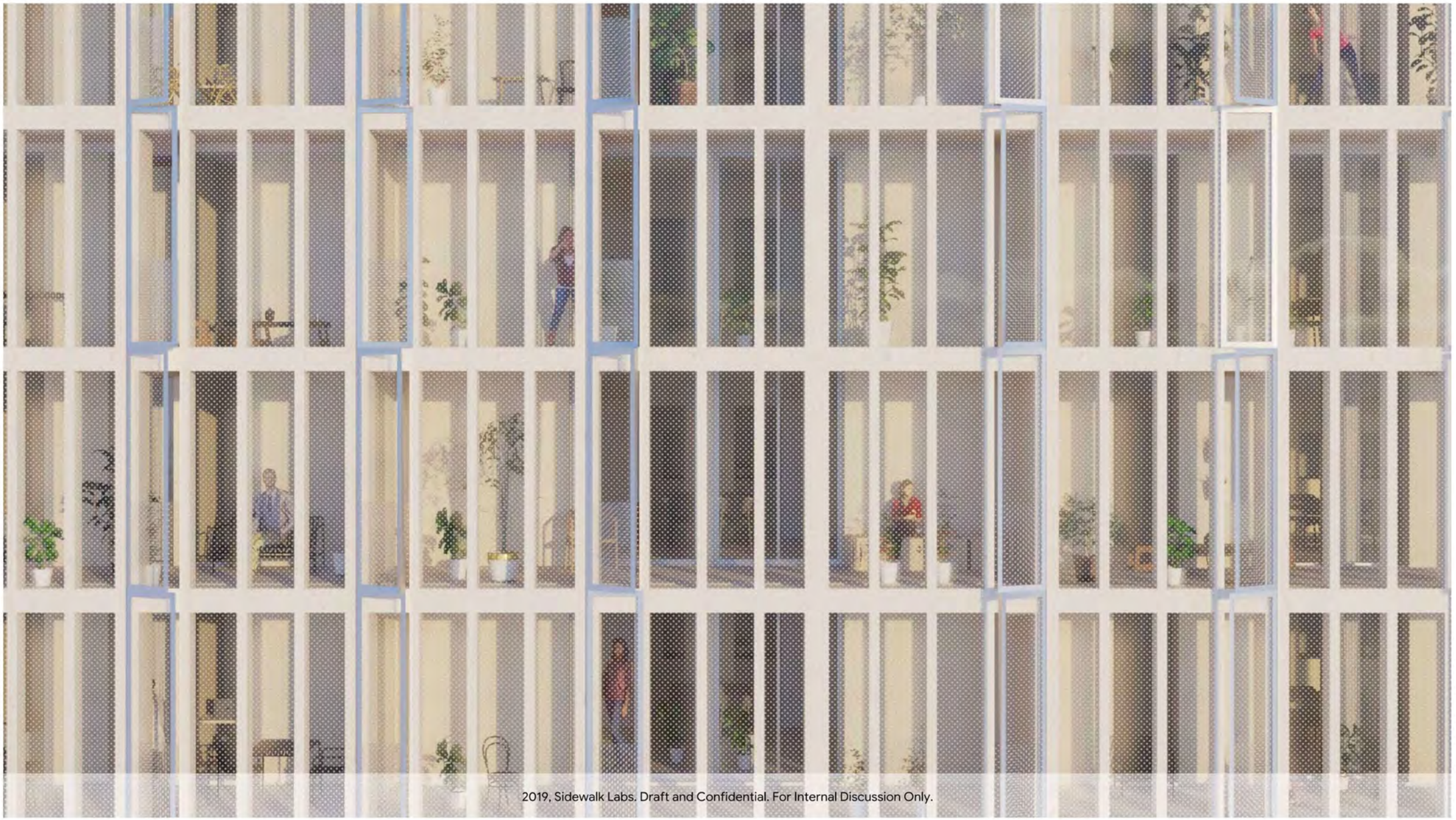
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APPROACH

Building Innovation Touch Points

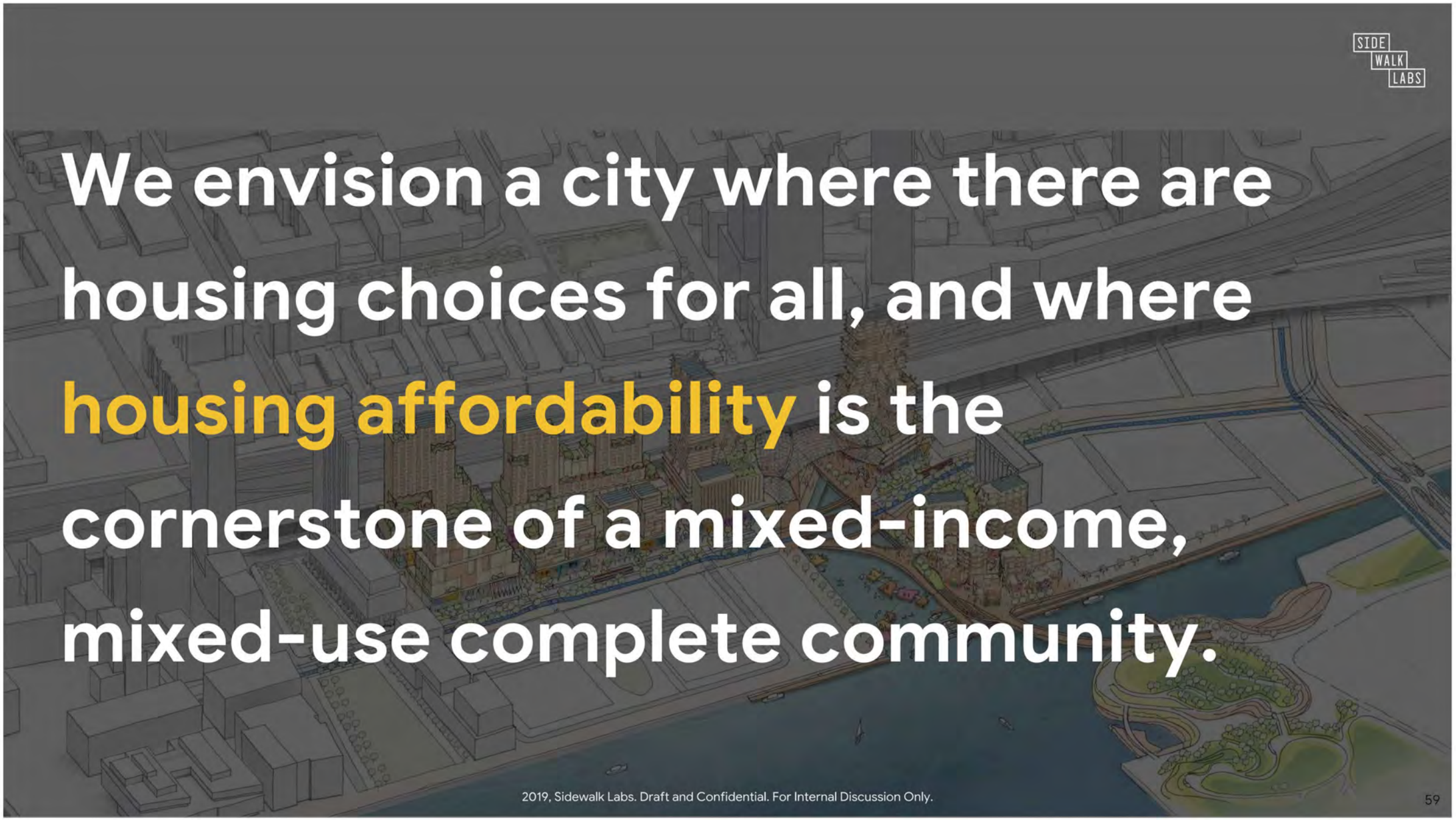
TYPE	Item	Technical Focus	CITY	PROV	FED
Mass Timber Buildings (Kit of Parts and Factory)	**Buildings up to 18 storeys when approved**	IBC is understood to approve in 2021. If approved how does Sidewalk Toronto coordinate with new code in Canada. Will Canada follow the same timing as IBC?		✔	✔
	Buildings up to 30 storeys	Provide alternative design solutions to provide strategies that approve these beyond code height timber buildings	✔		
	Shikkui Plaster for Fire Protection	This Cradle to Cradle (C2C) substance should achieve UL certification in 2019/2020. (Already passed the UL test sponsored by Sidewalk Labs).	✔	✔	
Flexible Wall Systems	**Movable Wall Systems**	Have a movable wall system for residential and retail reviewed and approved for use.	✔		
	Digital Electricity - DC Power	This non-code electrical system needs recognition as satisfying the electrification of a building.	✔		
	Mist Sprinkler Systems	This UL-approved system is currently not used widely.	✔		
Building Uses	**Normalize Performance Based Criteria**	Can we collapse some of the existing zone categories into a single performance based criteria category (i.e. noise, air quality, loading of structure, "over" occupancy)	✔		

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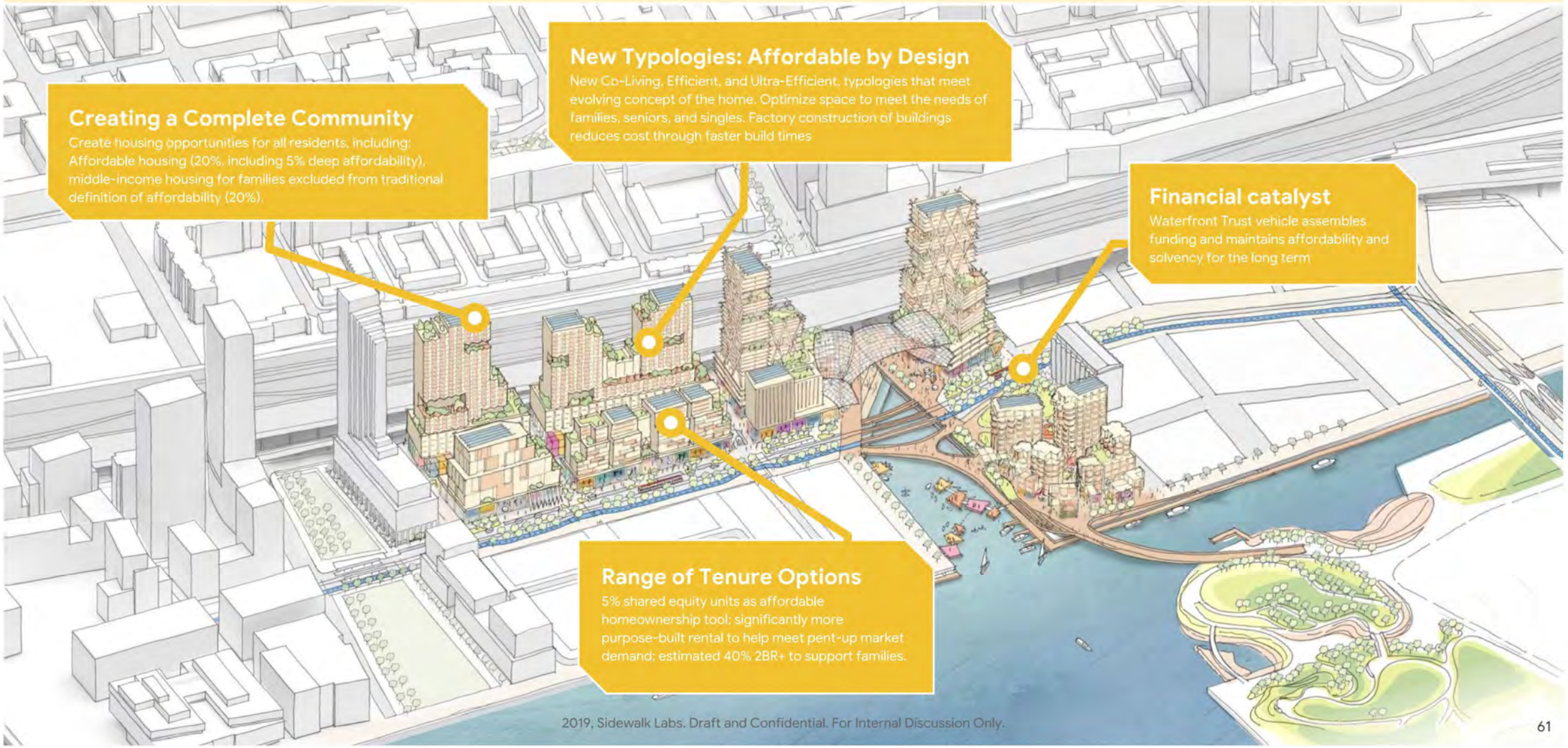
Sidewalk Toronto objectives & guiding principles

Mixed-Income, Diverse	Commit to creating a mixed-income, diverse community
Scalable, Sustainable Test Bed	Serve as a global test bed to incubate scalable, sustainable change for housing affordability
New Options	Believe affordability also means meaningfully increasing choice in housing options for Torontonians
Specific to Toronto	Will respond specifically to unique Toronto market conditions
Not End-All Solution	Cannot single-handedly solve the local housing crisis, but can contribute to the creation of new solutions
Public & Non-Profit Partnership	Will partner with existing housing sector stakeholders, including all levels of government

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Quayside can be a testbed for the future of housing



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Toronto today faces an unprecedented housing affordability crisis

Record Growth

Toronto is projected to grow by 1 million people by 2041

More Singles, Seniors, Multi-generational

Single-person households now #1 type in Canada



Soaring Prices

Average home 9X median household income in Toronto

Record-low Vacancy

1% vacancy rate, below Montreal, NYC, Chicago, LA

Condos and Investors

76K condos built in last decade, compared to only ~2K rental units

Affordability Out of Reach

No mid-range programs to increase affordability for middle-class families

Funding Challenges

Lack of existing programs and partnerships to address affordability needs of households of all incomes

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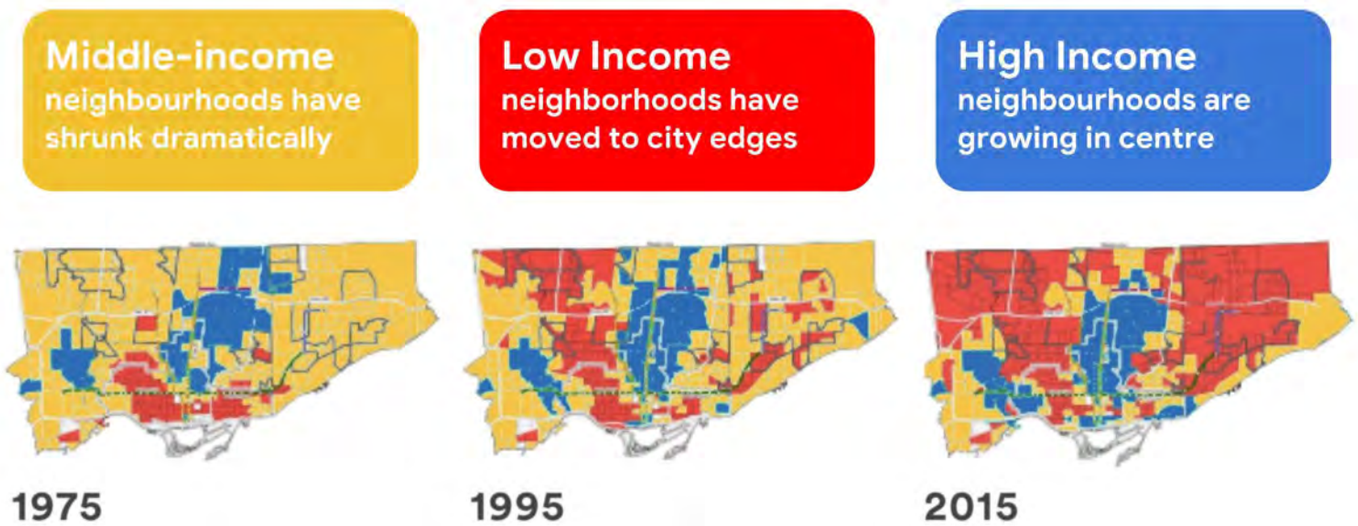
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The result is an increasingly income-stratified city...

Since the 1970's, Toronto has seen shrinking middle-class neighborhoods, low-income families pushed to the edges, and growth of high-income neighborhoods in the city center.

A city divided into "Three Cities" by income

Updated 2015, Hulchanski



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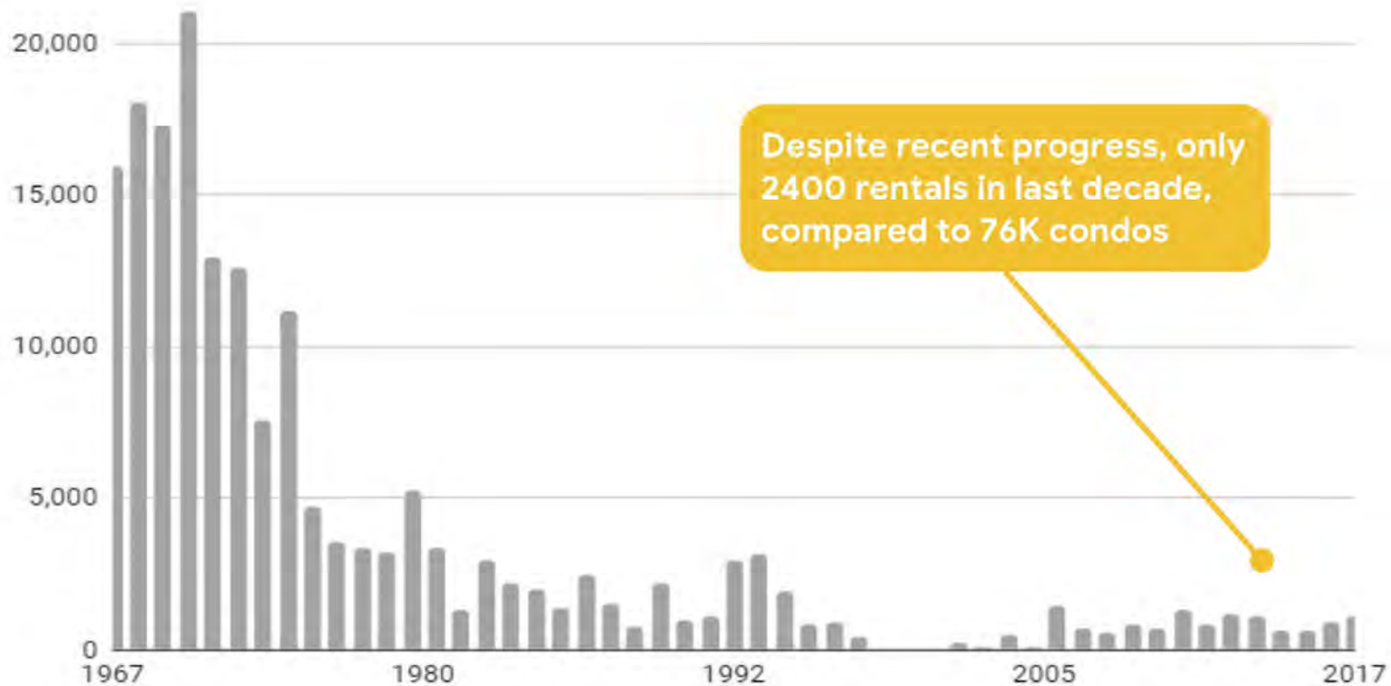
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...and an unhealthy housing ecosystem

Toronto has seen a precipitous decline in purpose-built rental housing. This imbalance has led to a purpose-built rental gap—even though half of Torontonian households rent, rental housing makes up less than a quarter of the overall supply.

Decline of demand purpose-built rental housing stock

City of Toronto, Purpose-Built Rental Units Completed by Year



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SWL proposes a comprehensive approach to housing affordability

Lowering Cost to Build



Leverage building technologies to lower the cost of construction and pass on some of the savings to residents

Rethinking How We Live



Redesign the home to create a more efficient, sustainable residential lifestyle

Developing New Financial Approaches



Create new mechanisms for financing affordable housing that will seed self-sustaining housing funding over the long term

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Our housing innovation toolkit for Toronto

SIDEWALK LABS

1	2	3	4	5	6
CREATION	CREATION	DELIVERY	DELIVERY	EXPERIENCE	EXPERIENCE
Purpose-built and affordable rentals	**Waterfront Housing Trust**	**Nonprofit collaboration**	**Shared Equity**	**New Typologies: Efficient Unit Design and Co-living**	**Affordable Housing Application**
Commitment to much-needed purpose-built and affordable rental housing in a market starved for rental units, aimed to be a testbed for future development	Creation of a new trust vehicle that assembles diverse housing funding sources, creates new oversight capabilities, and can incubate new housing finance tools at scale	New collaborative model between nonprofit housing and service providers in Toronto to deliver deep affordability tailored for households that need it most	An alternative tenure model of sharing ownership with an independent entity to increase housing attainability while maintaining some of the upside potential of owning	New typologies that maximize flexibility, efficiency, and community (co-living) to meet the evolving and shifting needs of families, singles, and seniors in Toronto	Digital affordable housing application and "one stop shop" to learn about housing opportunities, submit applications, get updates, and receive notifications

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PURPOSE-BUILT AND AFFORDABLE RENTALS

Our strategy in Toronto commits to 40% below-market housing

What We Propose

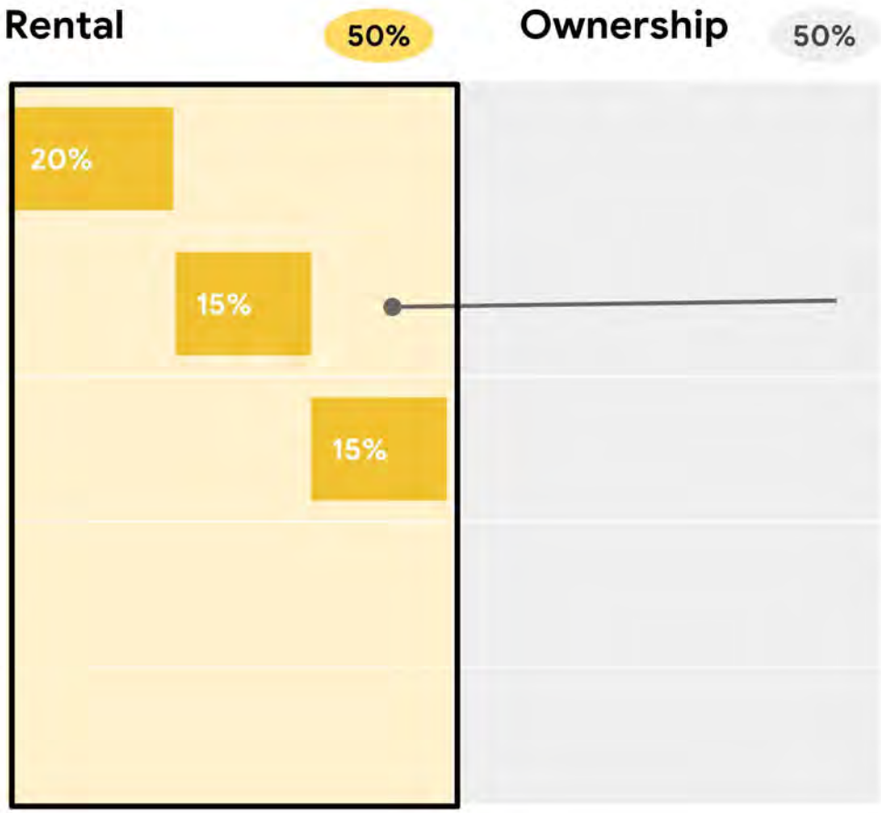
Affordable Rental
Less than 100% AMR

Mid-Range Rental
100-150% AMR

Market-Rate Rental

Shared Equity
Affordable ownership

Market-Rate Condo



50% Rental Housing, across a mixture of incomes

50% of the housing program at Quayside will be rental housing, which is seriously under supplied in Toronto. It is estimated that 8,000 units per year are needed to create a healthy housing ecosystem. This rental housing is also spread over a wide range of incomes, from deeply affordable to market rate.

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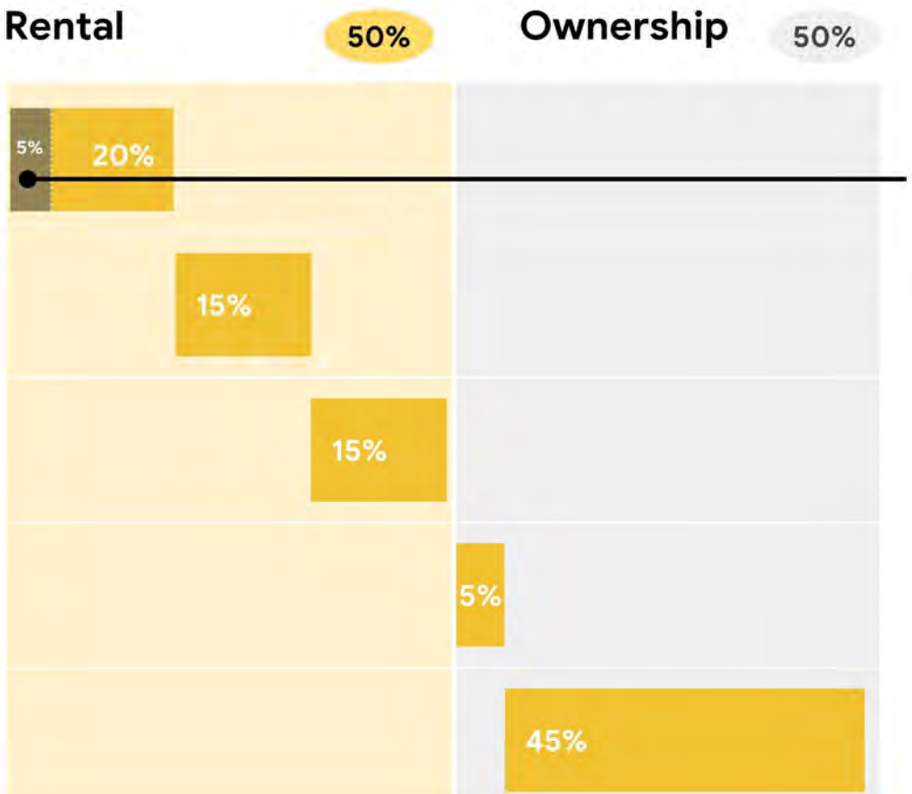
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Shared Equity
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Market-Rate Condo



Includes deep affordability
Includes 5% deep affordable units for low-income residents, delivered with the support of experienced non-profit housing organizations

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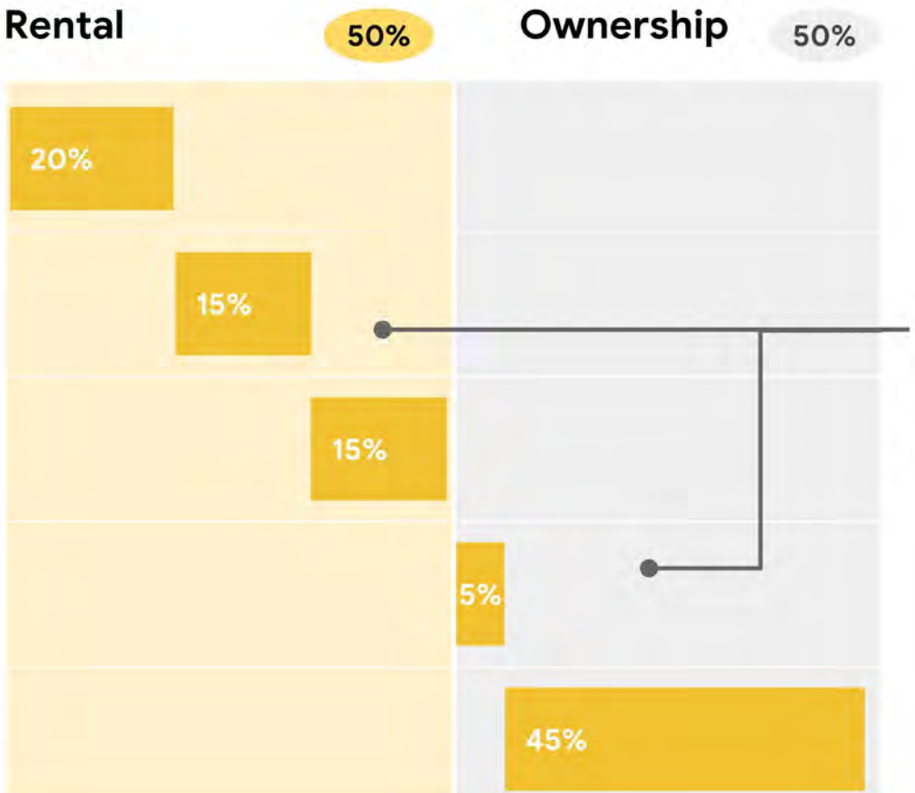
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Mid-Range Rental
100-150% AMR

Market-Rate Rental

Shared Equity
Affordable ownership

Market-Rate Condo



Middle-income housing
Significantly more purpose-built rental, and up to 15% mid-range rental and 5% affordable home-ownership through shared equity for a total of 20% middle income

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What We Propose

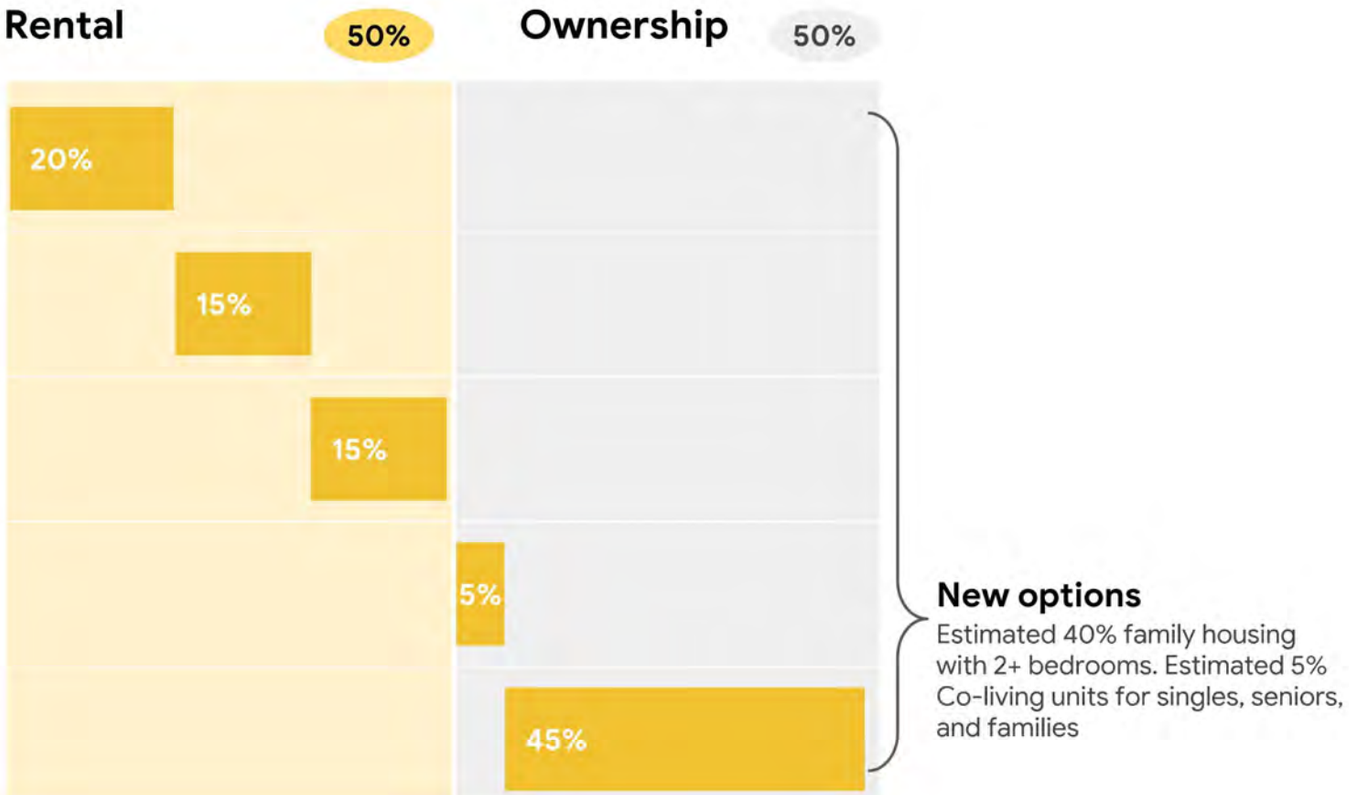
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Commitment to More Housing Options

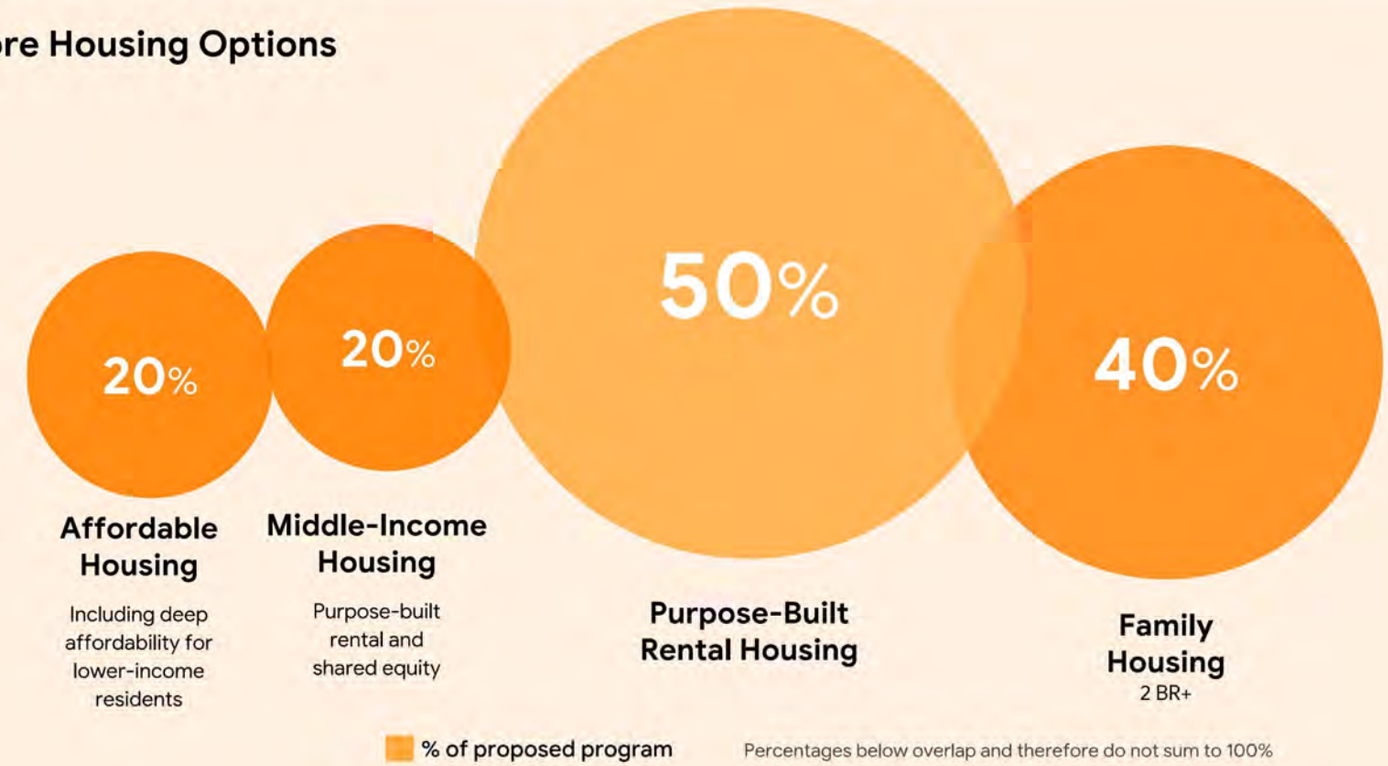
The Quayside affordable housing program mix will demonstrate a different approach and serve a much broader portion of the population.

More Affordability

40%

Below-Market Housing at Quayside

More Housing Options



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Concept of the home is changing dramatically

FOUR KEY DRIVERS









ORIGINAL RESEARCH ON HOUSING TYPOLOGIES

nARCHITECTS

nArchitects: Global architectural precedents and inspiration for housing innovation and efficiency

OCAD UNIVERSITY

OCAD Small Grants Research: Global housing typology innovation and application to local Toronto

Ryerson University | Ryerson City Building Institute

Ryerson "Re-thinking the Tower": Market scan and case examples of housing typologies relevant for Toronto

SIDEWALK TORONTO

SWTO Family Lifestyles: Ethnographic research with Toronto families on residential living

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EFFICIENT UNITS AND CO-LIVING

Concept of the home is changing dramatically

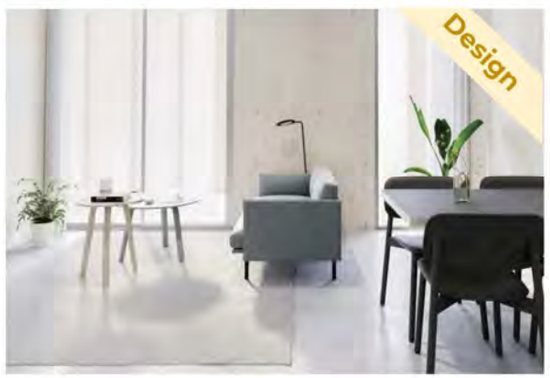
	More singles...	More seniors...	More multigenerational...
Global	47% Adults living alone in Sweden	20% Urban growth in United States attributed to Boomers in rental market	↑47% Growth rate of multigenerational households in the UK since 2015
Toronto	62% Households in Toronto that are single- or double-person	16% Toronto citizens who are 65+ years old, outpacing under-15 age group	↑40% Growth rate of multigen-erational households in Toronto CMA since 2001[1]

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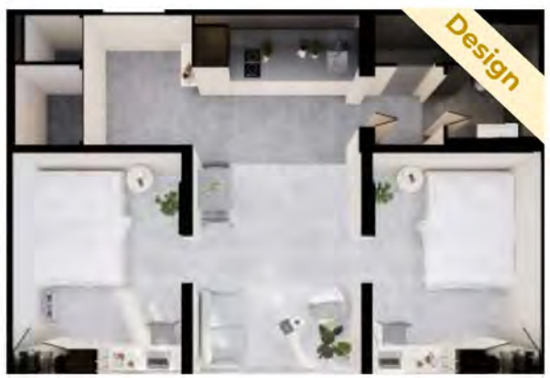
Sidewalk Toronto envisions the next horizon of typologies

EFFICIENT UNIT



Smaller units at a range of household types (not just 1-2 people) that allow for densification and efficient construction

ULTRA-EFFICIENT UNIT



Units that maximize spatial efficiency even further beyond efficient units

CO-LIVING



Communal housing type that pairs shared amenities with efficient units to enhance community for singles, seniors, and families

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Our housing innovation toolkit for Toronto

SIDEWALK LABS

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CREATION

Purpose-built and affordable rentals

Commitment to much-needed purpose-built and affordable rental housing in a market starved for rental units, aimed to be a testbed for future development

2
CREATION

Waterfront Housing Trust

Creation of a new trust vehicle that assembles diverse housing funding sources, creates new oversight capabilities, and can incubate new housing finance tools at scale

3
DELIVERY

Nonprofit collaboration

New collaborative model between nonprofit housing and service providers in Toronto to deliver deep affordability tailored for households that need it most

4
DELIVERY

Shared Equity

An alternative tenure model of sharing ownership with an independent entity to increase housing attainability while maintaining some of the upside potential of owning

5
EXPERIENCE

New Typologies: Efficient Unit Design and Co-living

New typologies that maximize flexibility, efficiency, and community (co-living) to meet the evolving and shifting needs of families, singles, and seniors in Toronto

6
EXPERIENCE

Affordable Housing Application

Digital affordable housing application and "one stop shop" to learn about housing opportunities, submit applications, get updates, and receive notifications

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Non-profit Collaborative: Prioritized partnering + learning from local nonprofits

SIDEWALK LABS

ENGAGING NONPROFIT COMMUNITY

- **Co-convened roundtable** with United Way of Greater Toronto on September 5, 2019
- **Hosted 17 nonprofit leaders** to understand what contributes to success (or failure) of integrating nonprofit affordable housing into community

WHAT PARTICIPANTS TOLD US SUCCESS LOOKS LIKE

> ...There is early and ongoing relationship-making and design input

> ...There is economy of scale on units to effectively deliver crucial support services

> ...Support and professional property management is appropriately tailored for population needs

> ...We don't reinvent the wheel—and work with existing players with deep knowledge

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Together we envision a new, inclusive proposal process

PARTNERING WITH NONPROFITS

- Toronto nonprofits play a critical role in delivering affordable housing
- Sidewalk Toronto seeks to partner with nonprofits to deliver deep affordable housing for low-income households
- We envision a new proposal process exclusive to nonprofits that invites them in at the earliest stages

HOW IT MIGHT WORK



- **Nonprofits invited to submit letters of interest** for participation in the project
- **It is possible to express interest without burdening their budgets** with costs in response to an uncertain RFP

- **Interested nonprofits join project consortium** and are invited to participate in design charrettes
- **They help the project meet the housing needs** of specific populations

- **Operating partner(s) are selected** through a transparent evaluation process
- **Evaluation criteria designed to reward joint applications** that serve diverse "deep affordability" populations

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AFFORDABLE HOUSING APPLICATION

Reimagining the process of applying for affordable housing

CURRENT STATE

- **Decentralized:** affordable housing applicants required to submit multiple applications
- **Opaque:** Lack of clarity on timing or likelihood of "winning", particularly for social housing applicants who wait 8-10 years on average
- **Complex:** required to submit lengthy documentation

PAIN POINTS ALONG RESIDENT JOURNEY TODAY

1 Learn about housing opportunities

- Private, NFP developer affordable options not transparent and decentralized by developer, operator—no central list available
- Alternative provider options not user-friendly—PDF online

2 Submit an application

- Manual updates required annually for Housing Connections
- Applications for affordable housing vary widely by developer, operator—require unique processes
- Overbidding, long lines, bribery common in competitive mar-ket-rate applications

3 Get updates

- No sense of timing or transparency on social housing applications
- Subjective selection process for market-rate applicants

4 Receive notification of acceptance

- No way to prepare for move if accepted to social housing

Journey map key

- Social housing waitlist
- Alternative / non-profit waitlist
- Affordable housing random selection
- Market rental housing

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AFFORDABLE HOUSING APPLICATION

What could a future vision look like?

SIDEWALK LABS

COMMON HOUSING APPLICATION



"One stop shop"

All Quayside and other available housing listings, with tailored recommendations based on a resident's unique income profile

Ease of application

Save required financial and eligibility requirements into profile and apply to as many housing options as you want

Transparent process

Know where you are in line, likelihood of "winning", and expectations for random selection timing. Get notified of new units as soon as they are available, or apply to upgrade unit

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SHARED EQUITY

Shared equity could be a model for affordable homeownership

THE CHALLENGE

- **Families getting crowded out.** Renters are 3X more likely than owners to live in unsuitable housing
- **Home prices outpacing ability to save.** At least 10 years to save for a 10% down payment on a median-priced home
- **Harder to reach homeownership.** 47% of CMA residents aged 20-34 live with their parents

EXAMPLE SHARED EQUITY MODELS



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SHARED EQUITY

Potential shared ownership model falls between renting and owning

CASE EXAMPLE

UK HELP TO BUY

- **Shared ownership model** whereby nonprofit housing associations share ownership with first-time homebuyer
- **New owner pays both mortgage payments and rent** (on the portion they do not own)
- **Allows "staircasing"** to purchase more equity over time

HOW IT MIGHT WORK



Own what you can afford and rent the rest

- Put as little as 3-5% down on a home, proportional to what you own
- Pay rent on the remainder
- Total monthly payments are competitive with market rents on a similar unit
- Build equity on the part you own - upon resale, appreciation capped to that level

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SHARED EQUITY

Singles, couples, or families with children could all benefit

HOW IT COMPARES

- **Down payment assistance programs.** Offered through Canada-Ontario Investment in Affordable Housing Program (IAH); Toronto Home Ownership Assistance Program (HOAP)
- **Shared appreciation loans.** Second mortgage models from Options for Homes, Artscape, Trillium, etc.

EXAMPLE RESIDENT ECONOMICS

			Traditional ownership	Shared ownership
Single or couple	• 1 Bedroom unit • $550,000 CAD • Limited by cost of down payment	% OF HOME OWNED	100% (10% down)	30% (10% down)
		DOWN PAYMENT[1]	$55,000	$16,500
		MONTHLY COST[2]	$2,600	$2,260
Family w/ children	• 3 Bedroom unit • $900,000 CAD • Interested in "staircasing" equity over time	% OF HOME OWNED	100% (20% down)	10% (15% down)
		DOWN PAYMENT[1]	$180,000	$13,500
		MONTHLY COST[2]	$3,780	$3,600

$74K at Y5

Partial ownership...

...in exchange for lower down payment and comparable monthly payments

...with upside potential on resale

[1] Before transaction fees
[2] Numbers rounded for simplicity

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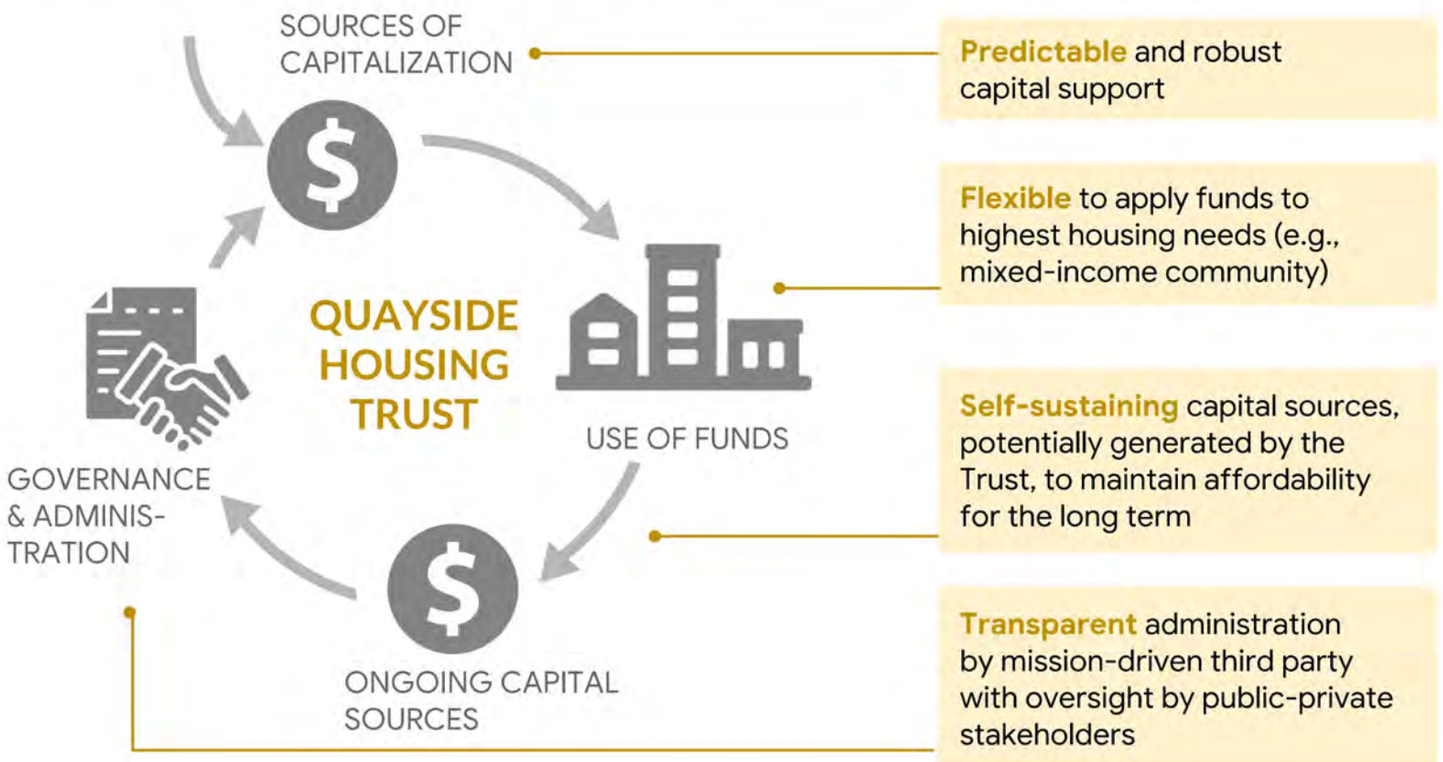
WATERFRONT HOUSING TRUST

A new trust vehicle can be a financial catalyst and steward of funds

OVERVIEW

- **Waterfront Housing Trust is a new mechanism** to fund and administer mixed-income, affordable rental housing
- **An innovative public-private partnership** that serves as an intermediary between private and non-profit organizations, financial institutions, and government entities

KEY FEATURES OF WATERFRONT HOUSING TRUST



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Trust can address several challenges today

CHALLENGES TODAY

- **Government funding is negotiated on a deal-by-deal basis,** hampering ability of affordable housing developers to make acquisitions knowing in advance that subsidies will be available
- **Subsidies are tied to specific and often narrow income bands** that do not necessarily align with the greatest need
- **Current programs pursue a single approach to affordable rental housing—set-aside of units within a condo building for a specific income band.** The Trust concept allows for the development of diverse, mixed-income rental properties

TRUST MODEL	IMPACT METRIC	BASELINE	ESTIMATED QUAYSIDE IMPACT	POTENTIAL AT SCALE
SOURCES OF CAPITALIZATION	1 More efficient delivery of public subsidy	Deal-by-deal negotiation	Assembles multiple sources of public subsidy	Predictable funding; lower cost to operate at scale
USE OF FUNDS	2 Delivery of mixed-income, affordable housing	10% affordable*	40% below-market	Can increase depth & breadth of affordability; more flexibility
ONGOING CAPITAL SOURCES	3 Incubation of new affordable housing policy & delivery tools	None; one-time, "zero sum" subsidy	Condo flip tax	Top-loss guarantees, low-cost loans, pooled reserves
GOVERNANCE & ADMINISTRATION	4 Public-private partnership with increased oversight and compliance	No ability to income-verify after lease-up	New asset management function	Potential to scale beyond Toronto

* As required at scale (Eastern Waterfront, beyond Quayside) by the "bricks and mortar" bylaws requirement

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Our housing innovation toolkit for Toronto

SIDEWALK LABS

1
CREATION
Purpose-built and affordable rentals

Commitment to much-needed purpose-built and affordable rental housing in a market starved for rental units, aimed to be a testbed for future development

2
CREATION
Waterfront Housing Trust

Creation of a new trust vehicle that assembles diverse housing funding sources, creates new oversight capabilities, and can incubate new housing finance tools at scale

3
DELIVERY
Nonprofit collaboration

New collaborative model between nonprofit housing and service providers in Toronto to deliver deep affordability tailored for households that need it most

4
DELIVERY
Shared Equity

An alternative tenure model of sharing ownership with an independent entity to increase housing attainability while maintaining some of the upside potential of owning

5
EXPERIENCE
Efficient Units and Co-living

New typologies that maximize flexibility, efficiency, and community (co-living) to meet the evolving and shifting needs of families, singles, and seniors in Toronto

6
EXPERIENCE
Affordable Housing Application

Digital affordable housing application and "one stop shop" to learn about housing opportunities, submit applications, get updates, and receive notifications

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APPROACH

Housing Touch Points

TYPE	SOURCE	THE ASK	CITY	PROV	FED
Funding sources	City Open Door Program:	Existing "as of right" sources	✔		
	CMHC Co-Investment Fund	Existing "as of right" sources			✔
	Mid-range rentals	**POTENTIAL NEW:** Abatement on property taxes and development charges	✔		
	Affordability Innovation Fund	**POTENTIAL NEW:** Potential partnership model with Federal gov't			✔
	CMHC Rental Construction Loan	Existing "as of right" rental sources			✔
Unit sizes / efficiency	Open Door Guidelines	Policy change to allow smaller units relative to existing Open Door Guidelines	✔		
	Growing Up Guidelines	Clearance on unit sizes given commitment to family-sized units	✔		
Universal housing application	Product design and build	Inform and engage the Shelter, Support, and Housing Administration (SSHA)	✔		

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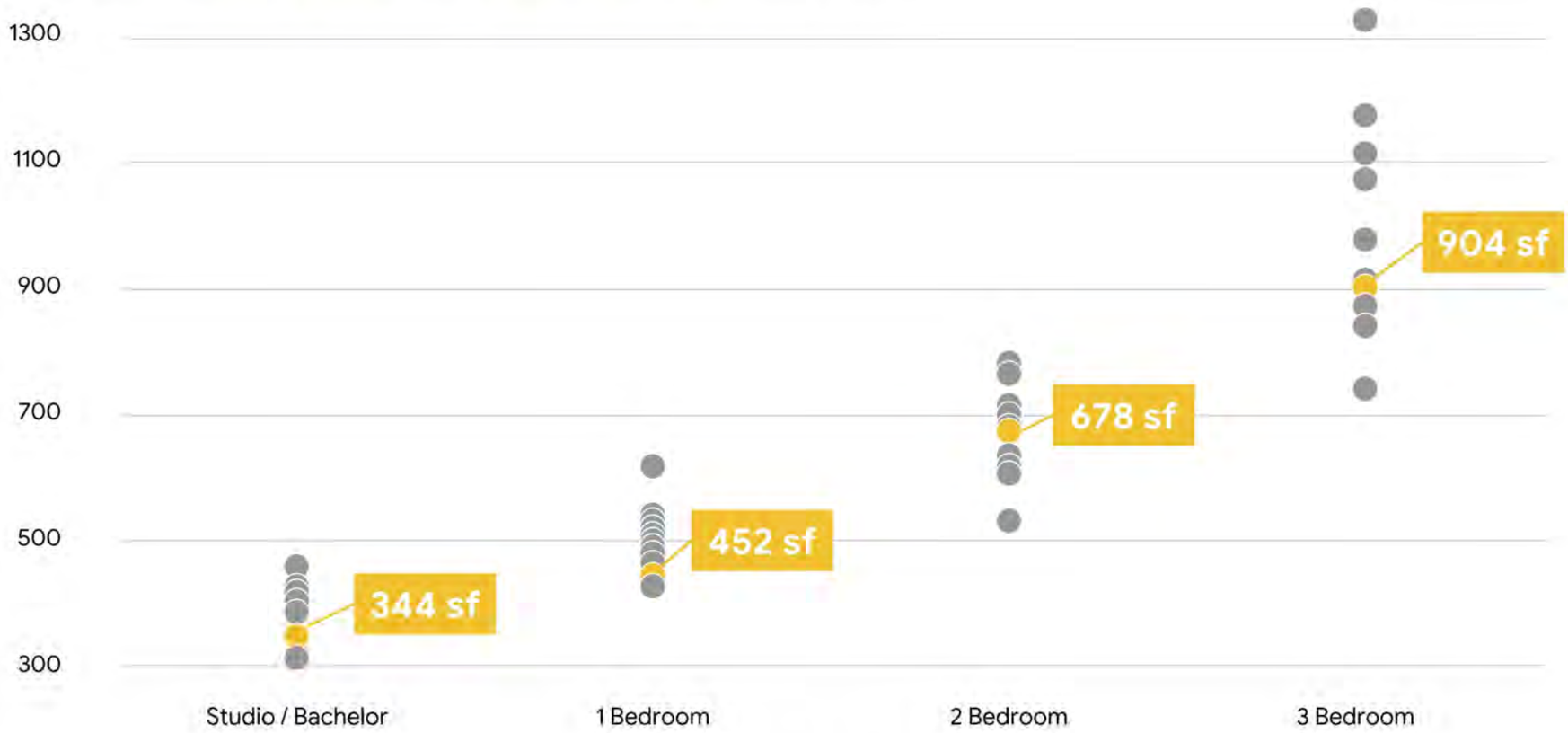
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EFFICIENT UNITS AND CO-LIVING

Efficient Unit in Line with Toronto Benchmarks

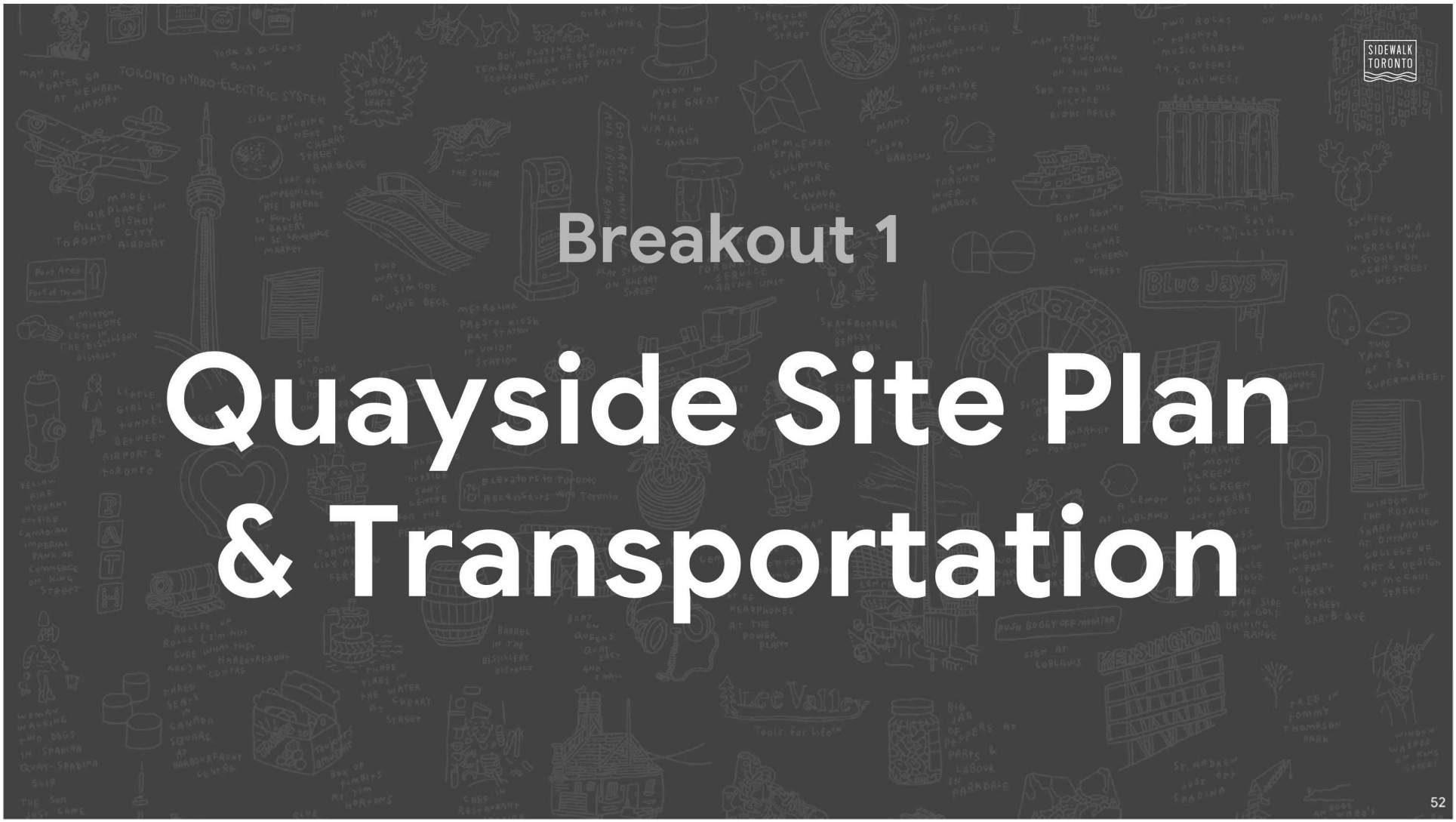
Efficient unit size compared to market benchmarks

Min sq ft compared to downtown and waterfront developments



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Based on our projections and analysis, the proposed mobility system in Quayside will...

1. Serve most trips via non-auto modes, provided that implementation of streetcar service is accelerated for implementation by 2025
2. Encourage walking and cycling by providing a dense, speed-controlled network that focuses on comfort and access to bikes and transit
3. Handle an unprecedented number of curbside pick-up / drop-offs with fewer spaces
4. Provide alternatives to private automobile use in Quayside in order to facilitate a vibrant public realm

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Transit

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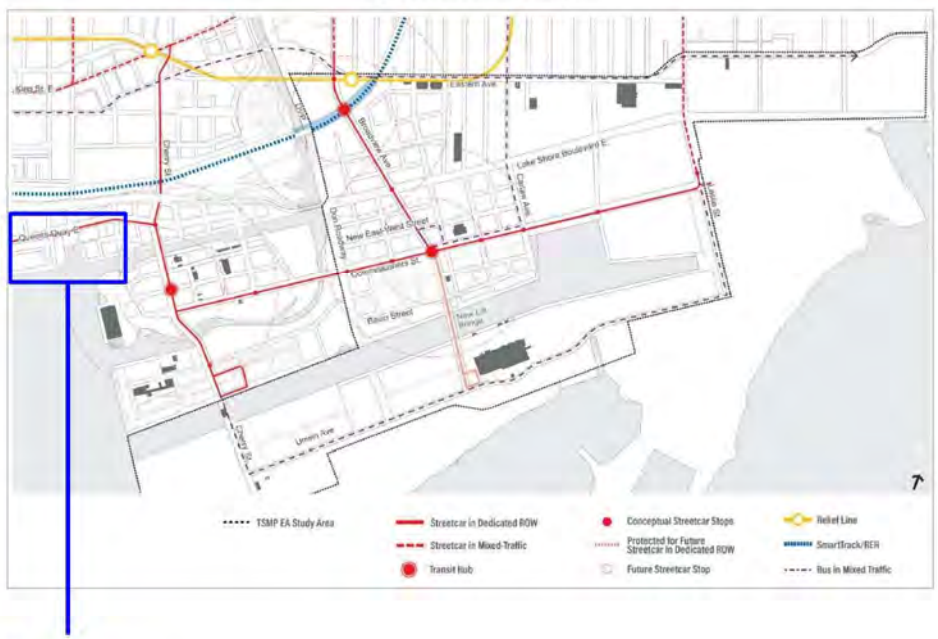
Eastern Waterfront LRT is already part of the City's approved transit plan and is essential to Quayside's success

In January 2018, City Council endorsed the Waterfront Transit Network Plan and directed staff to study options for the Union Station connection, targeted for completion in early 2019.

Sidewalk Labs agrees that this extension of the streetcar/LRT network is the best solution for connecting Quayside to the larger Toronto area.

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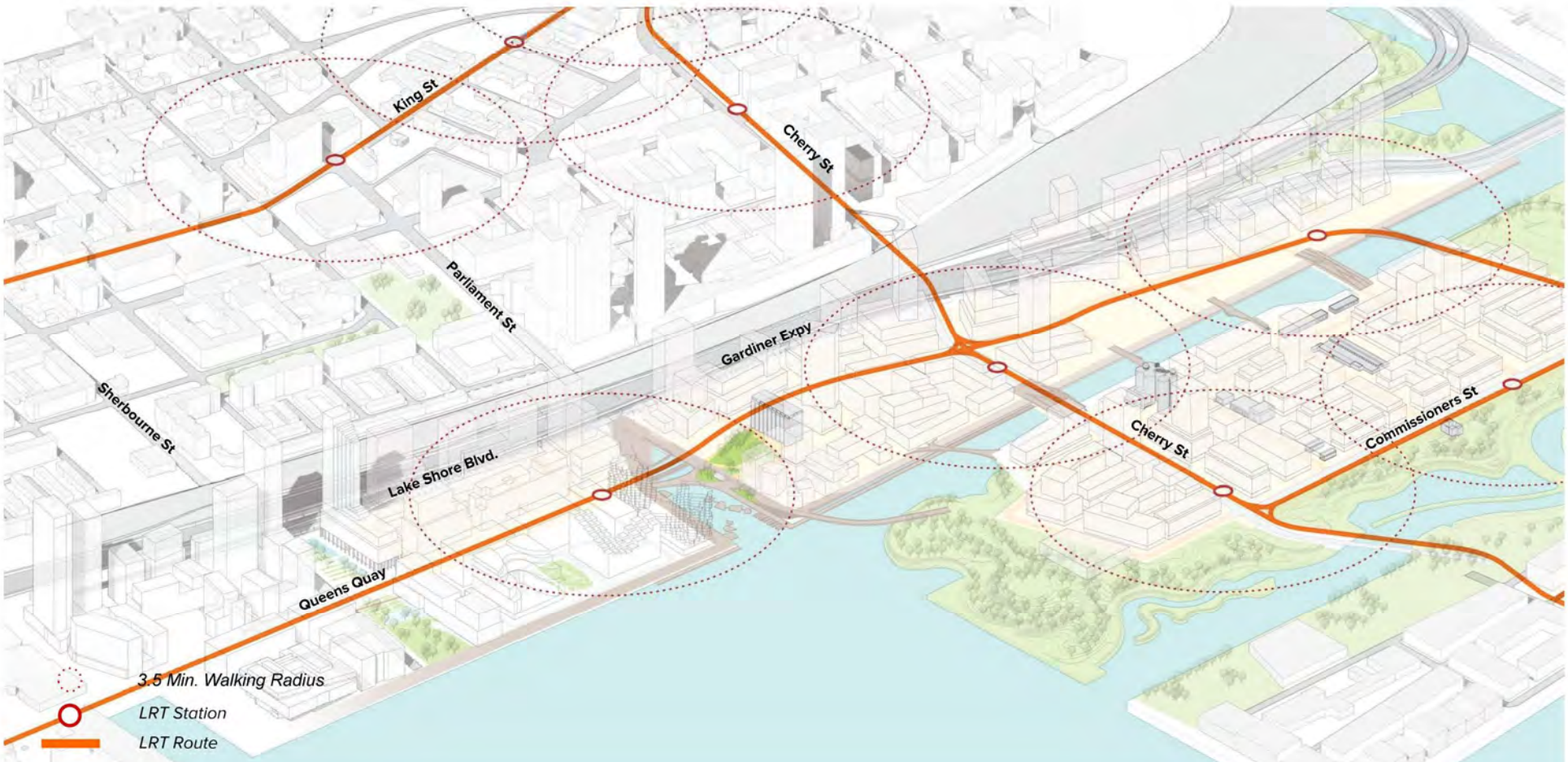
Figure 7 – TSMP Transit Network



Quayside

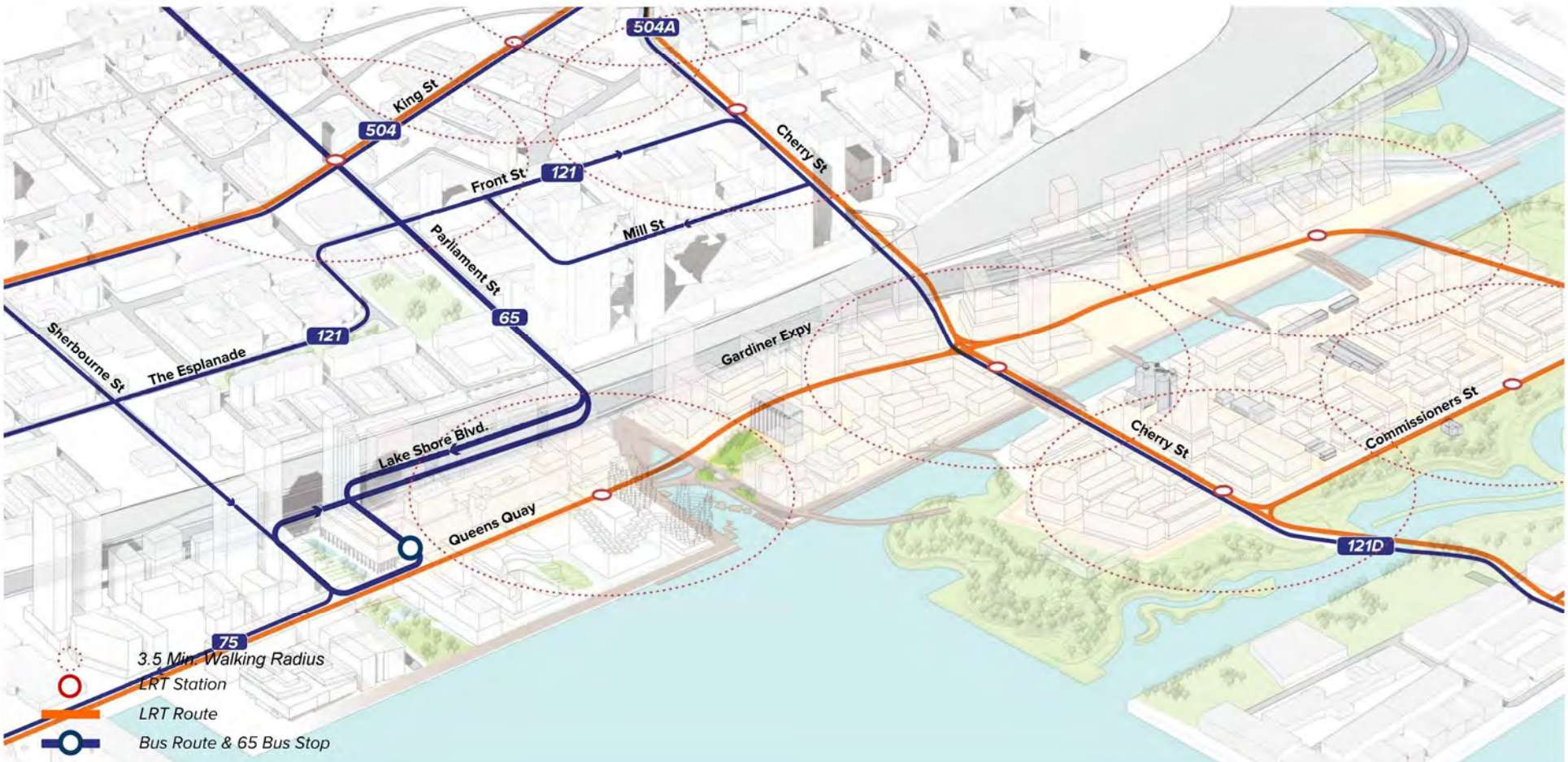
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Light-Rail Transit



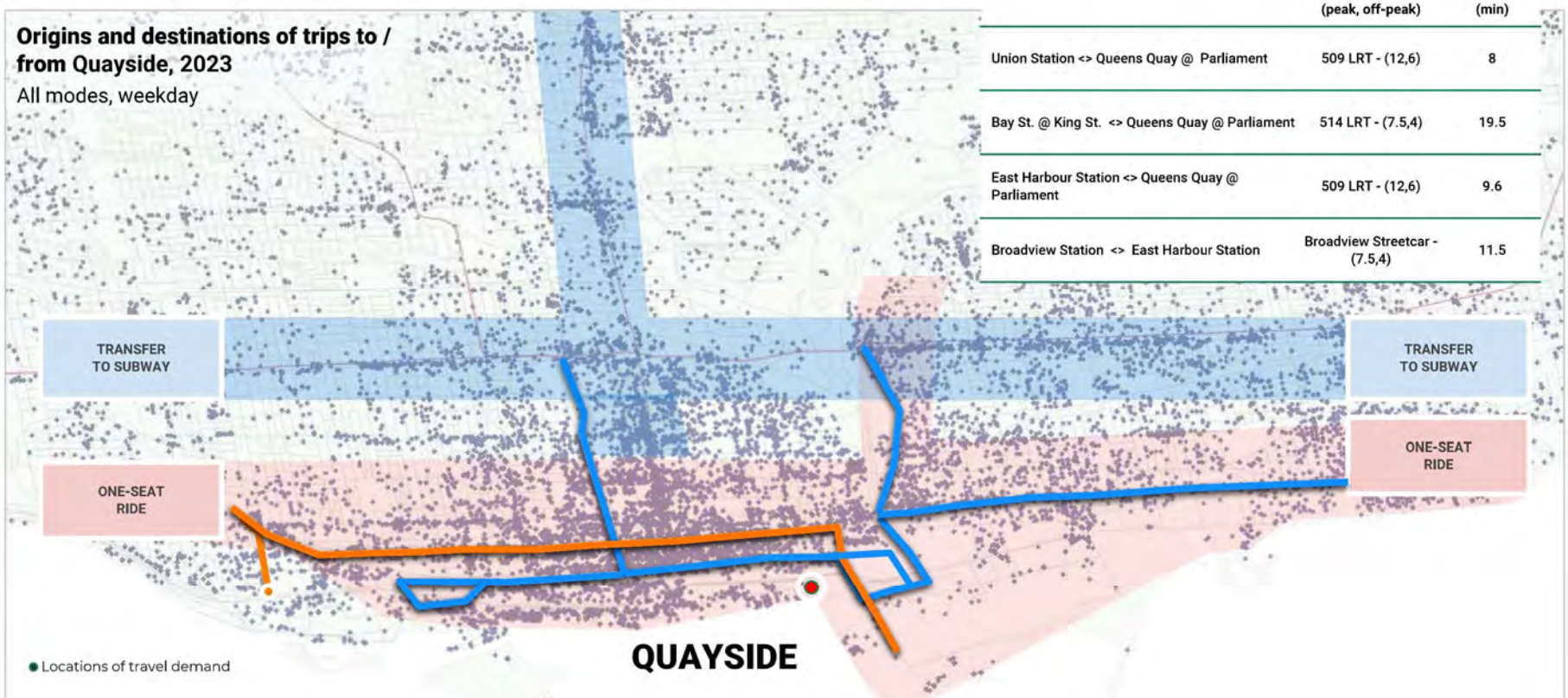
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Bus Route



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Streetcar extension will make a large number of destinations to / from Quayside accessible by transit



	Frequency In vehicle / hour (peak, off-peak)	Travel time (min)
Union Station <> Queens Quay @ Parliament	509 LRT - (12,6)	8
Bay St. @ King St. <> Queens Quay @ Parliament	514 LRT - (7.5,4)	19.5
East Harbour Station <> Queens Quay @ Parliament	509 LRT - (12,6)	9.6
Broadview Station <> East Harbour Station	Broadview Streetcar - (7.5,4)	11.5

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Walking & Cycling

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Parliament Plaza Begins with the Underpass

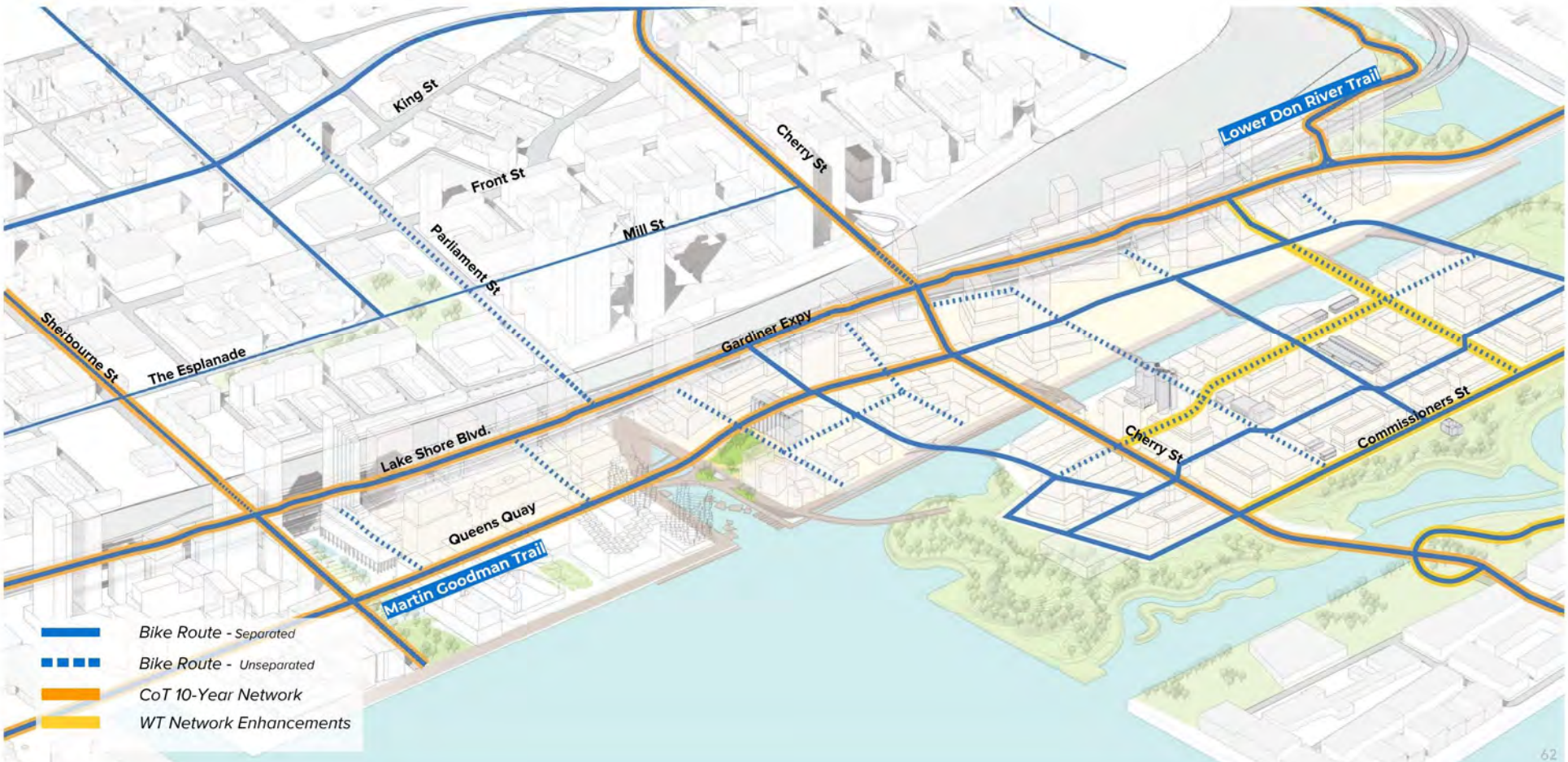


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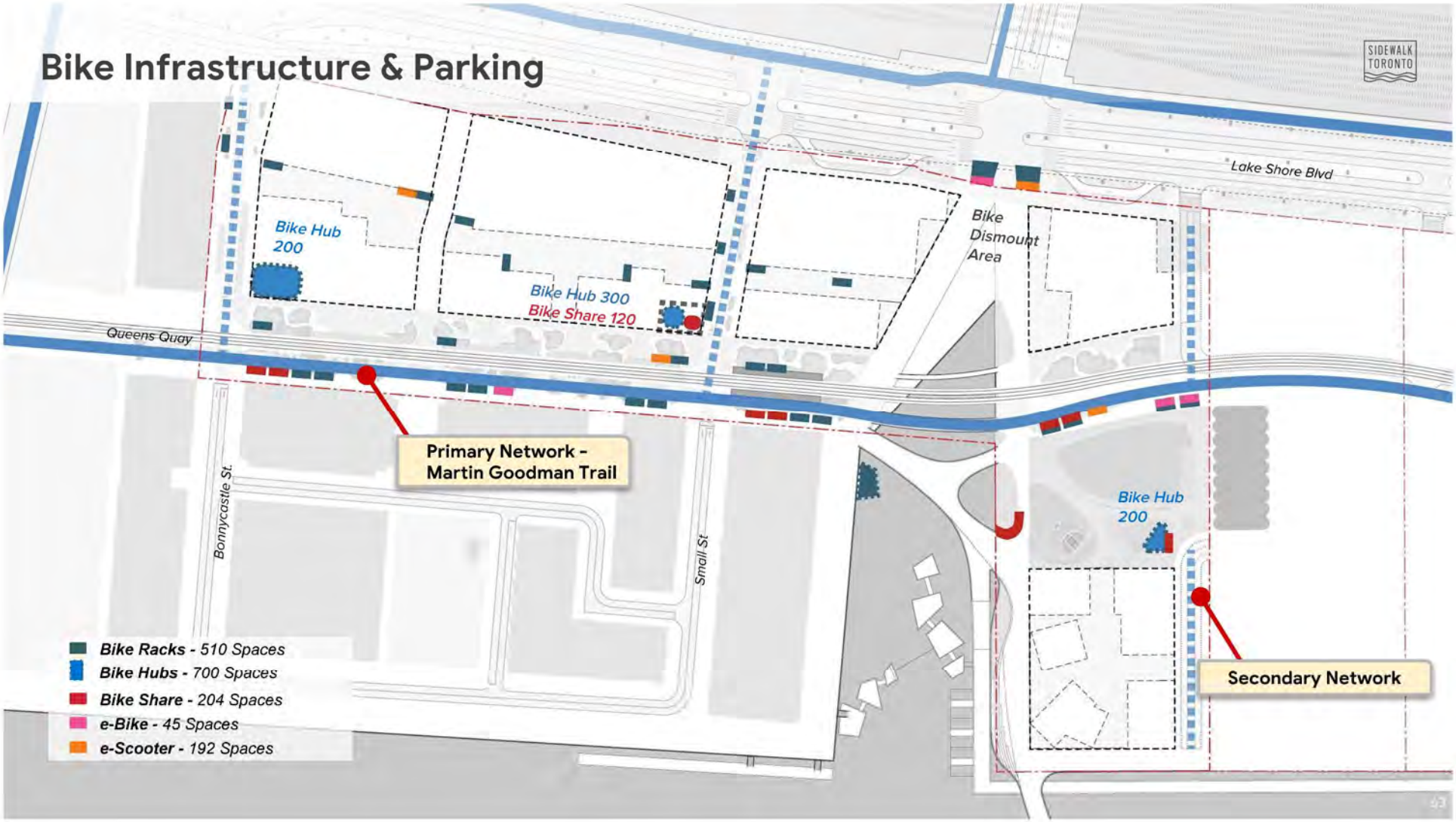


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Bike Network



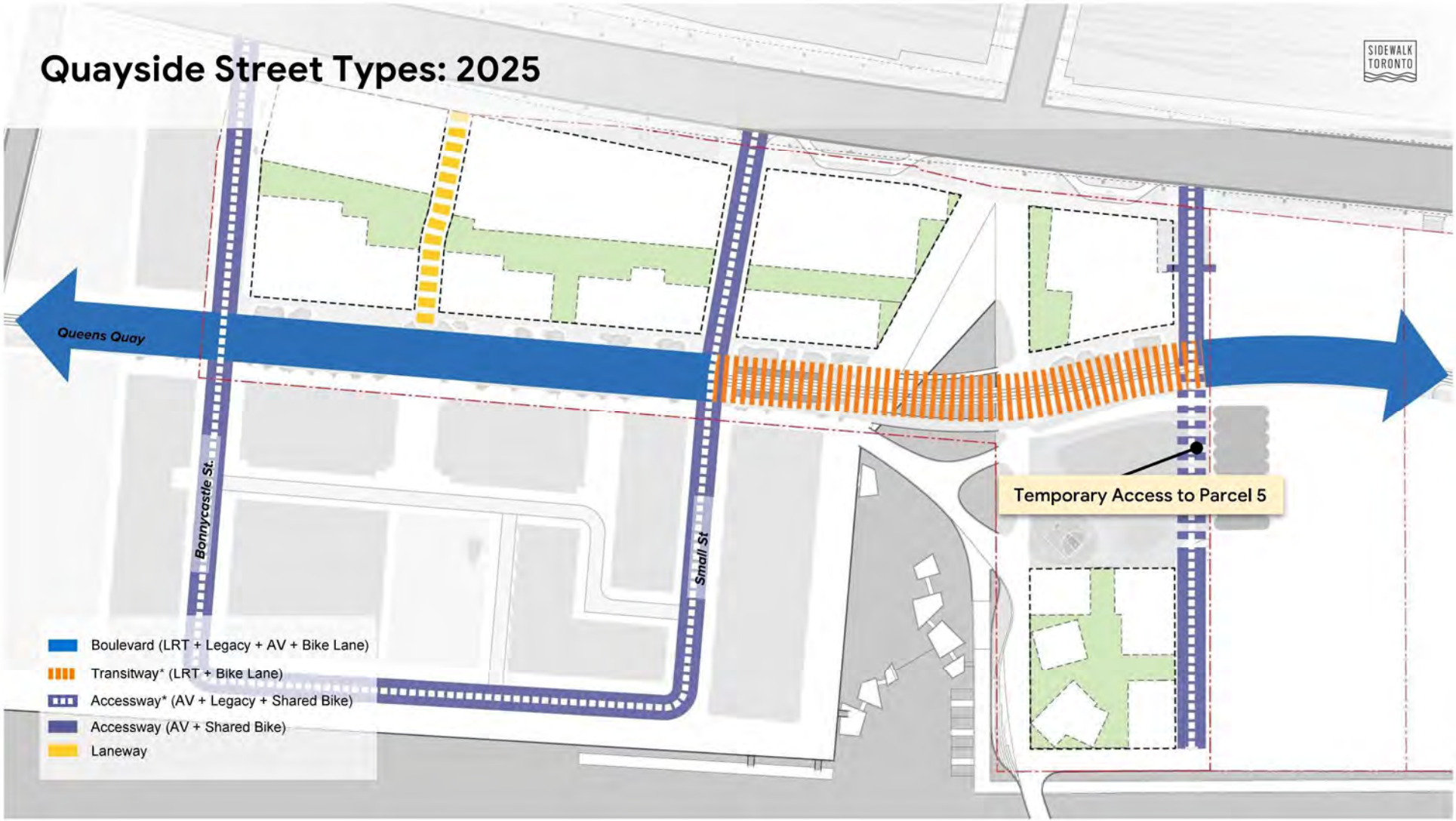
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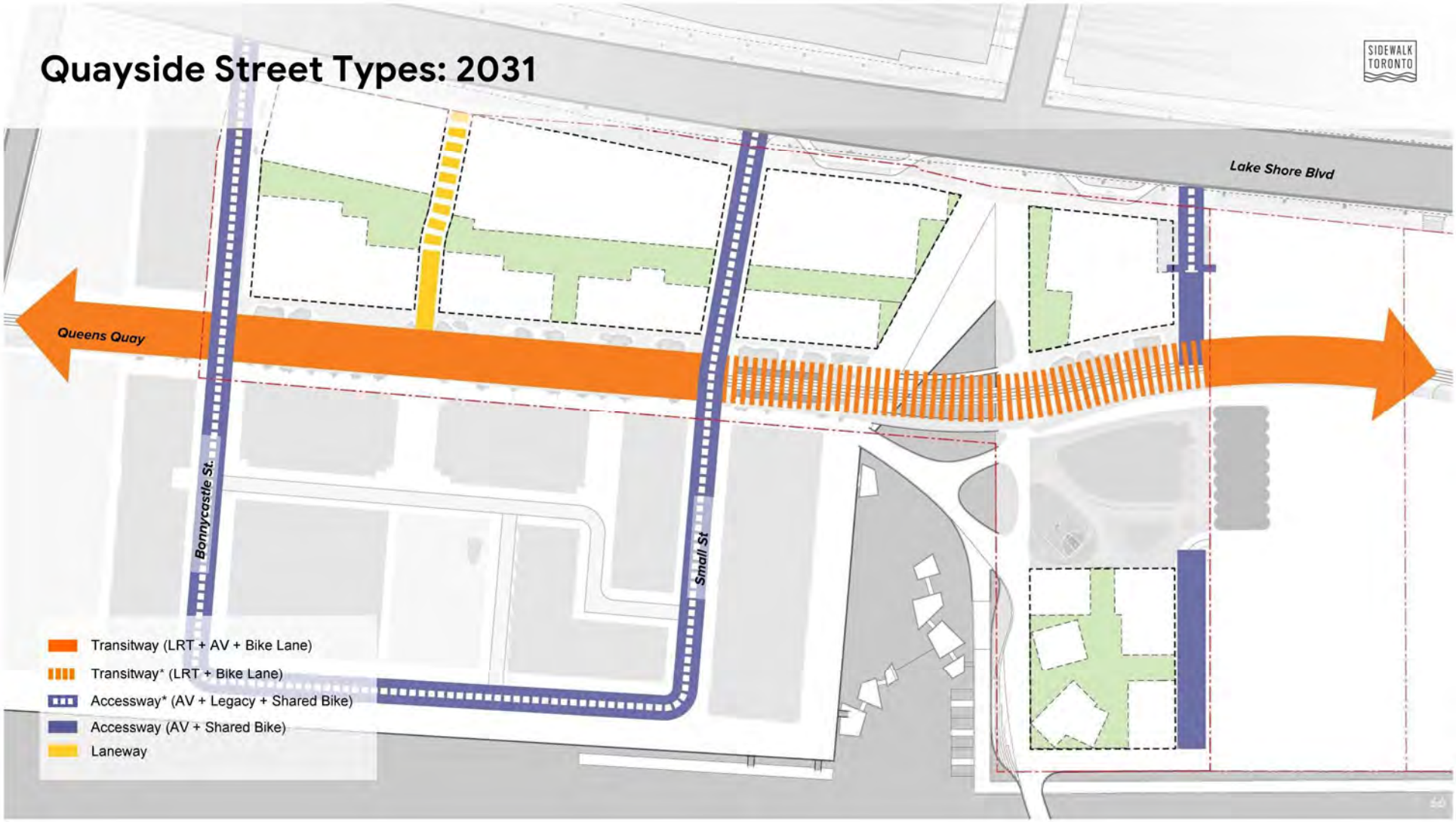
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Automobiles

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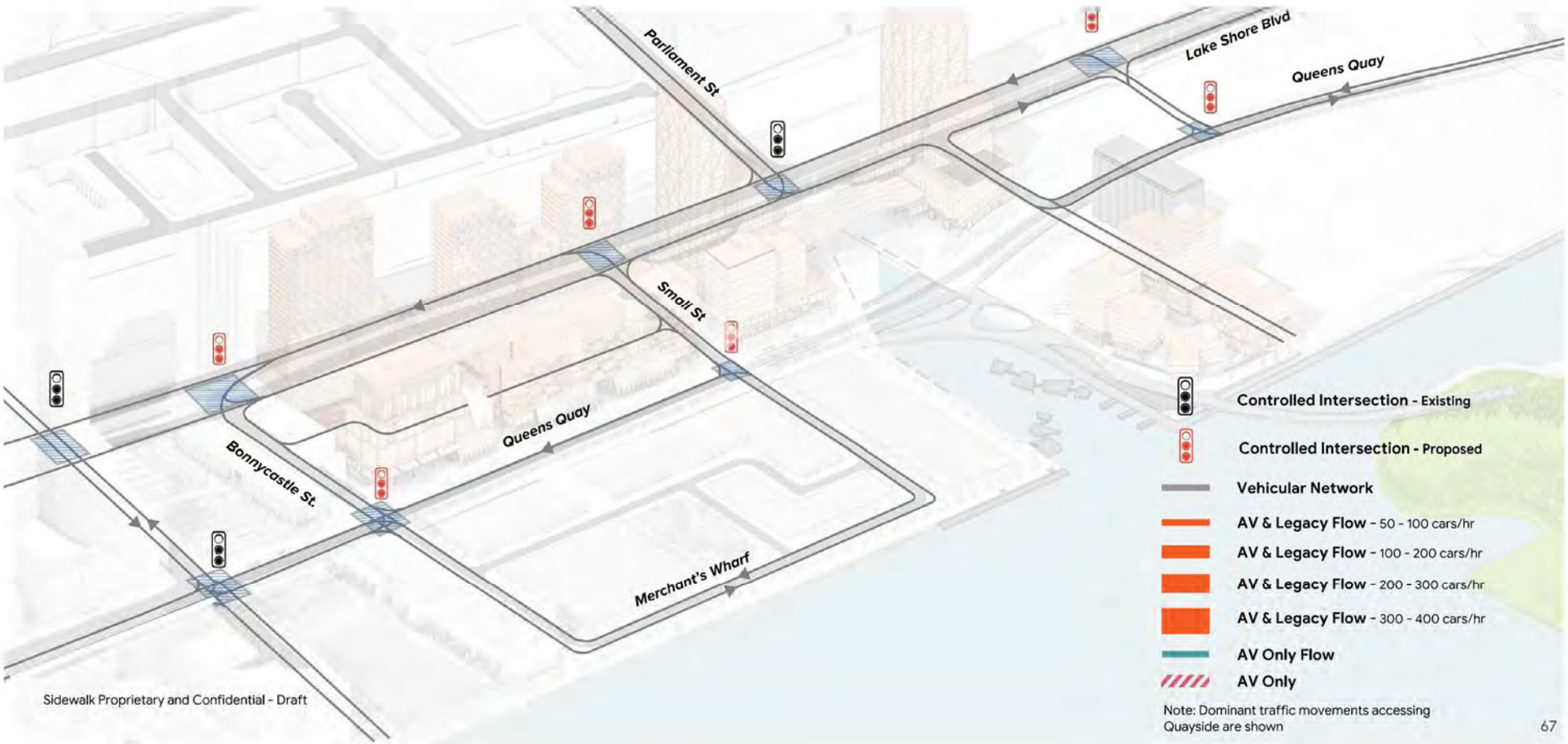
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Vehicular Circulation: 2025

Eastbound Traffic

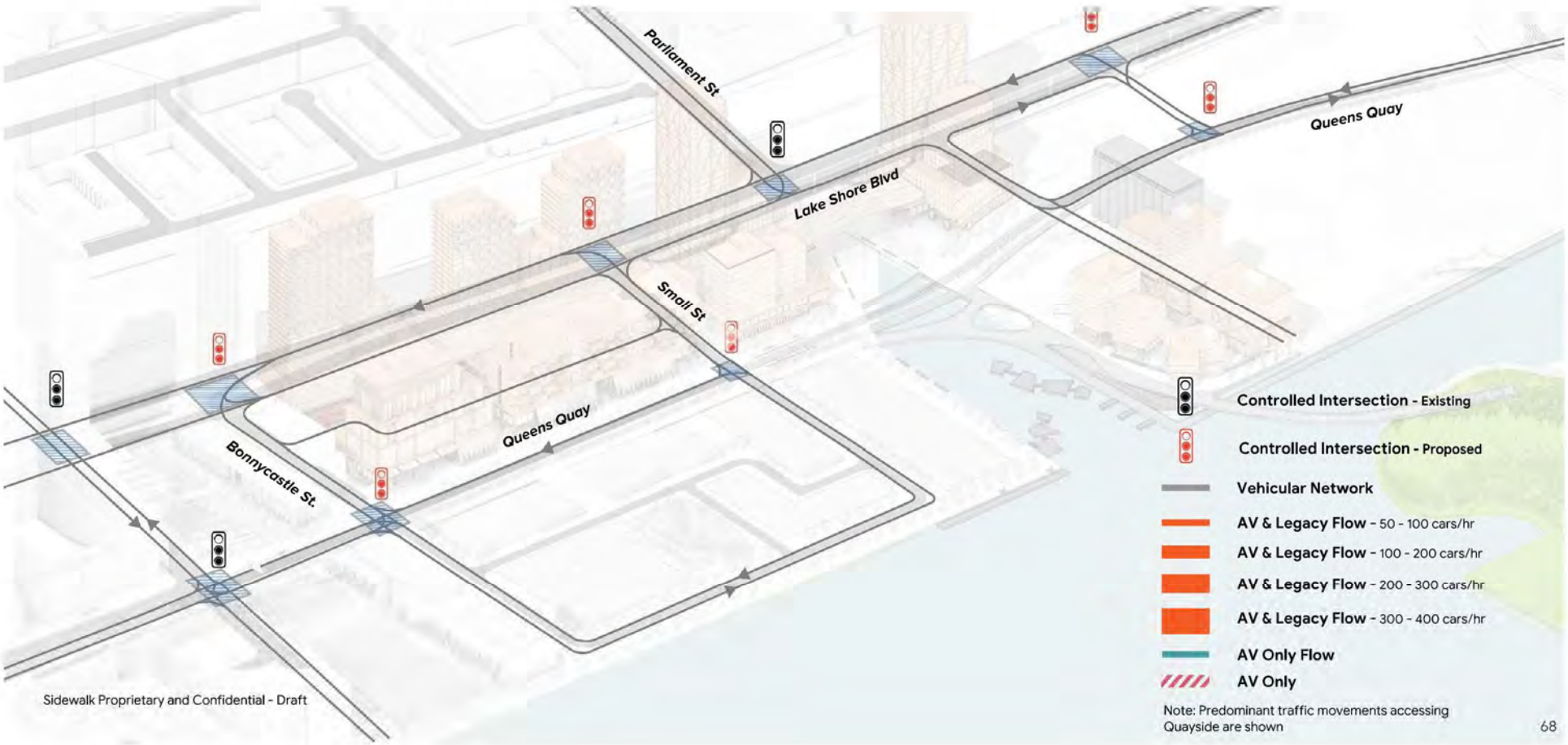


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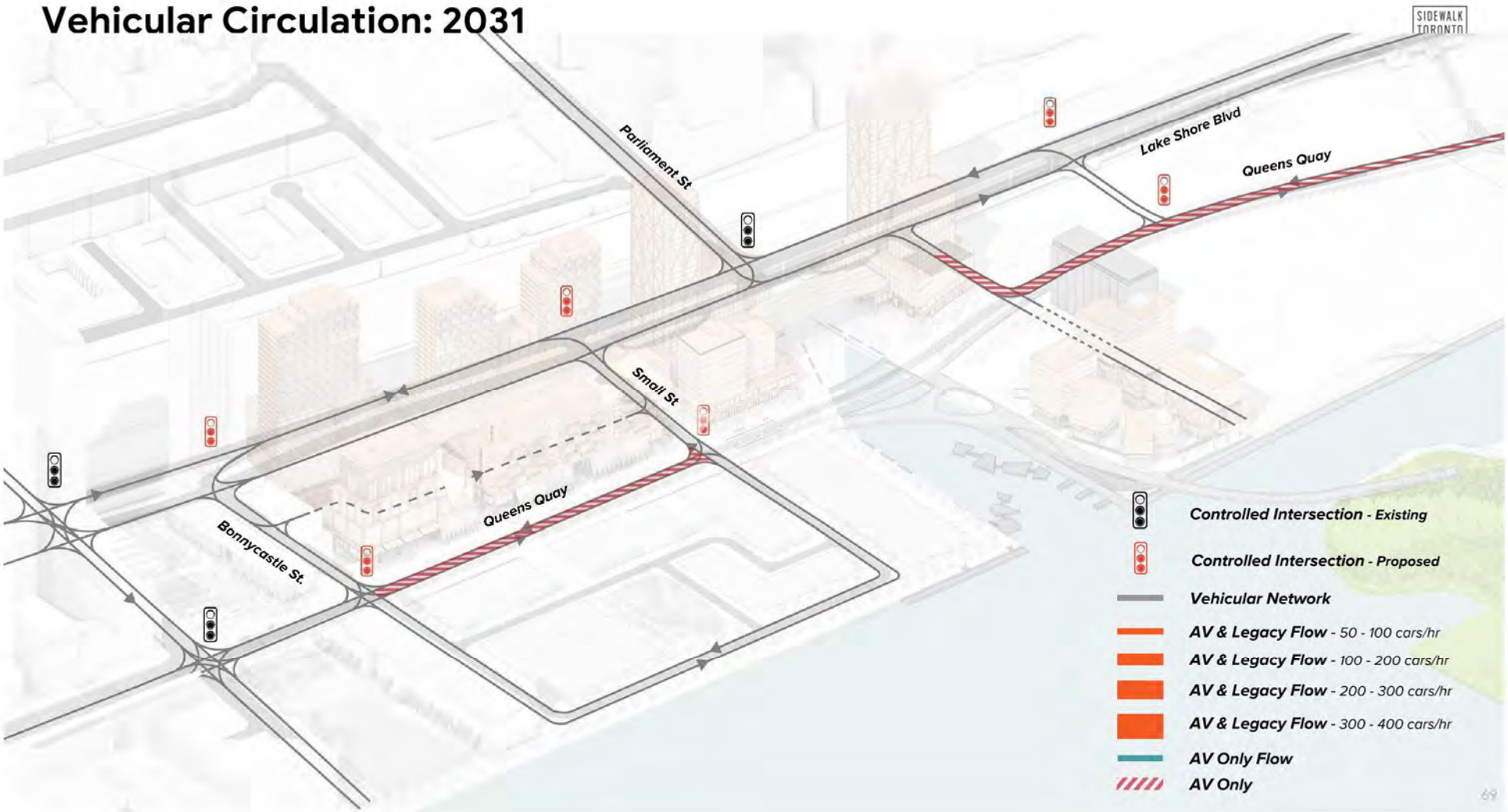
Vehicular Circulation: 2025

Southbound and Westbound Traffic



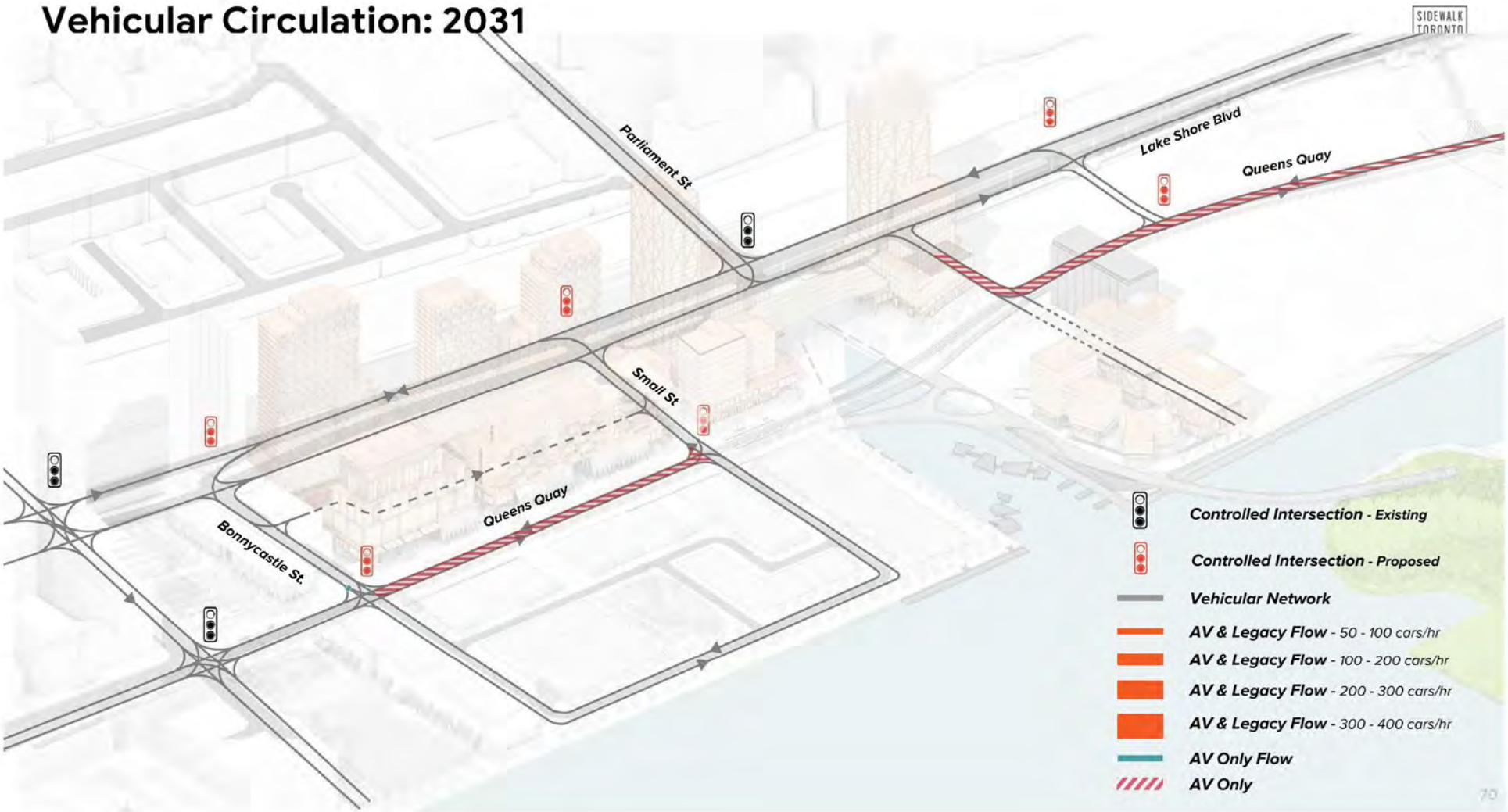
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Vehicular Circulation: 2031



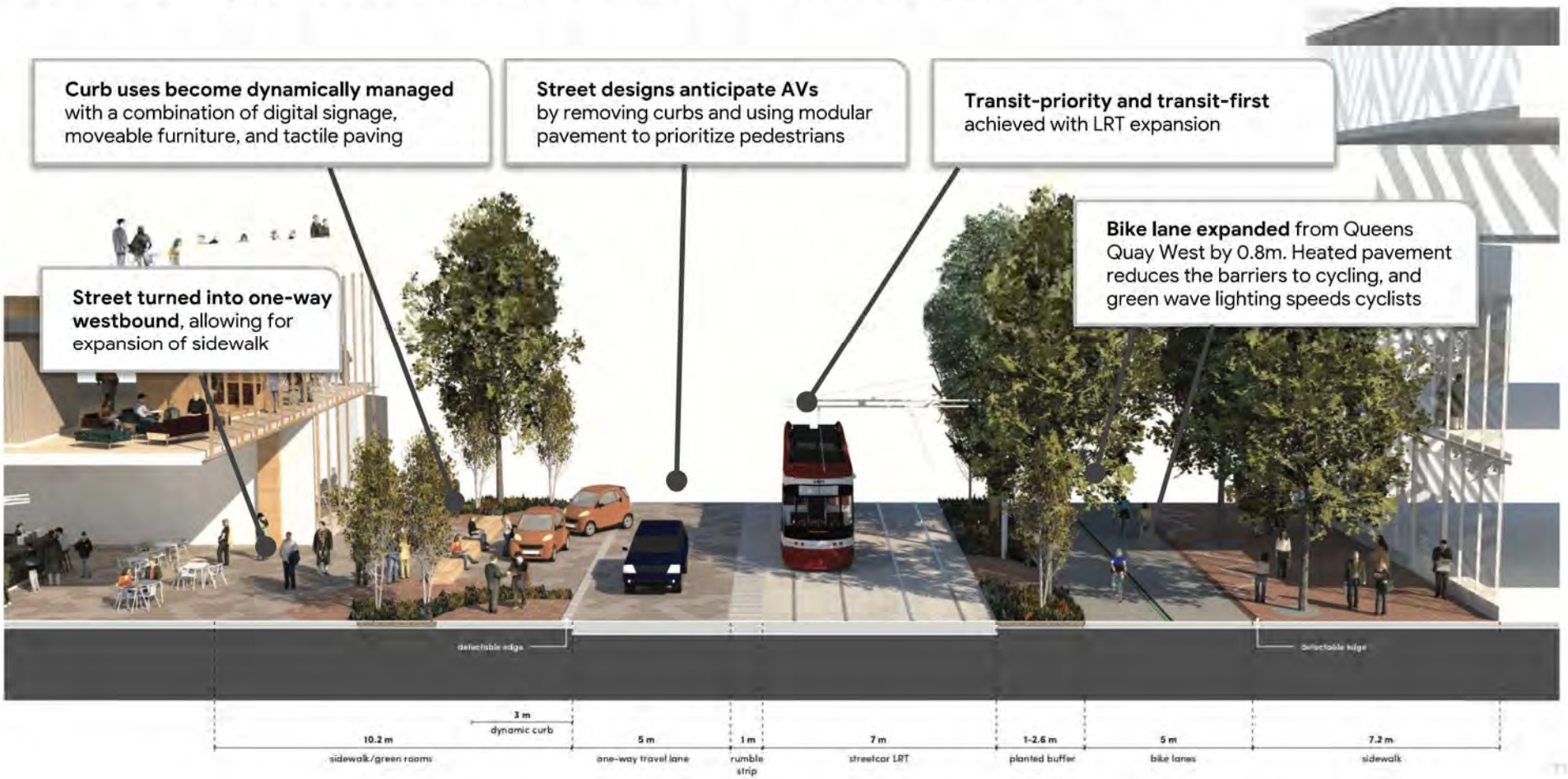
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Vehicular Circulation: 2031



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2025 Design: Queens Quay to Adapt for Future as One-Way Pilot



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2031 Design: Queens Quay to Become Transitway with Full AV Adoption

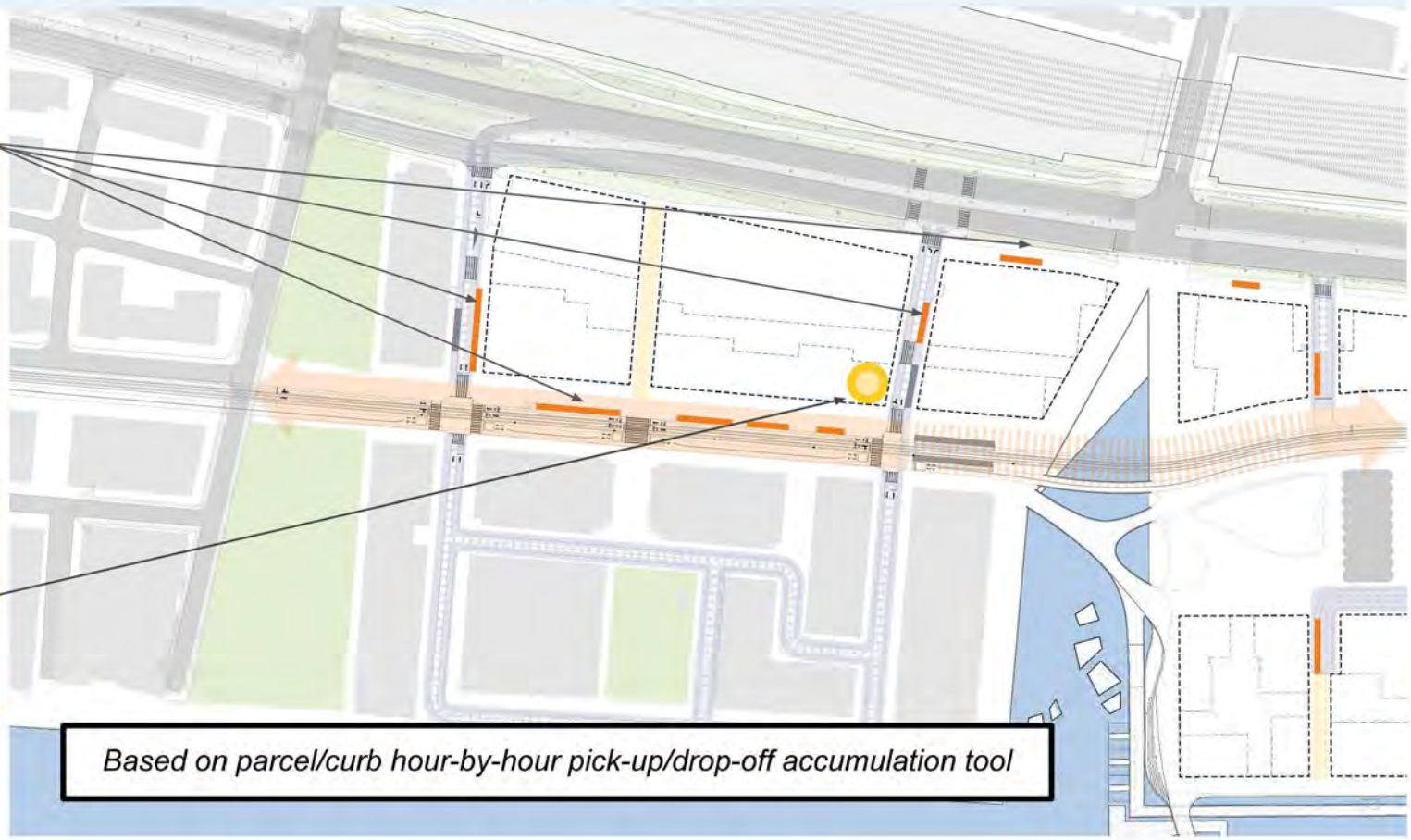


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Permit pick-up and drop-offs at an interchange facility, and at dynamically-managed curbside spaces

598 pick-up/drop offs at the peak hour will occur on-street at 34 dynamically managed curbside spaces

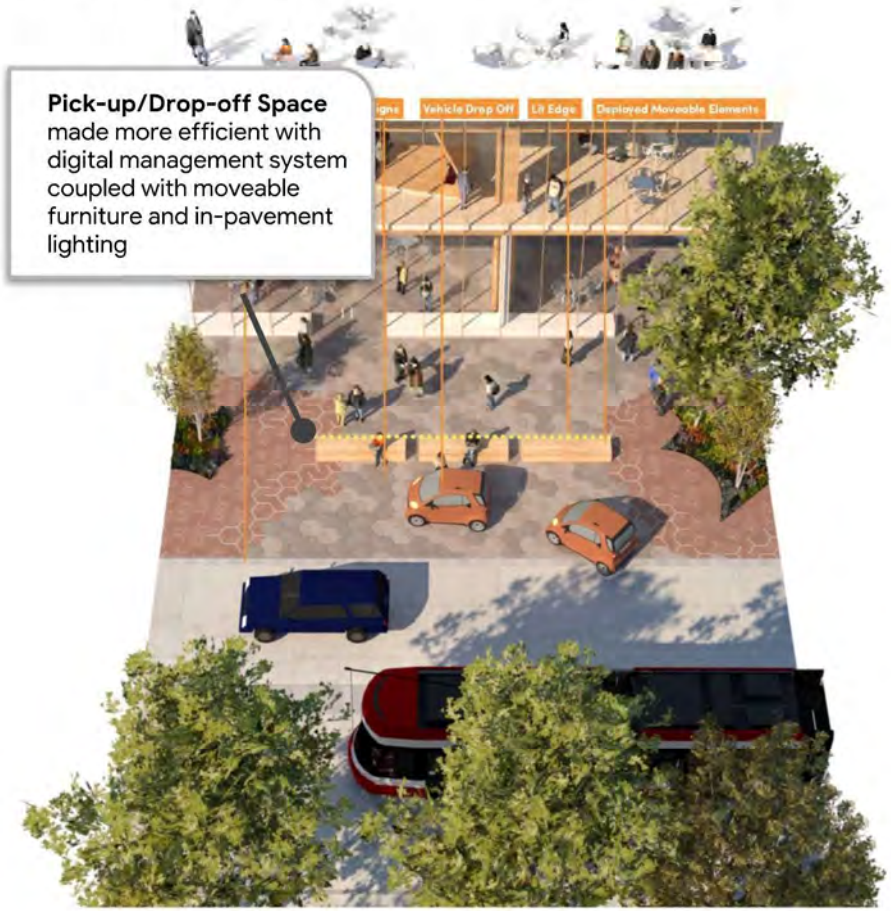
377 pick-up/ drop-offs at the peak hour will occur at a multi-modal interchange facility

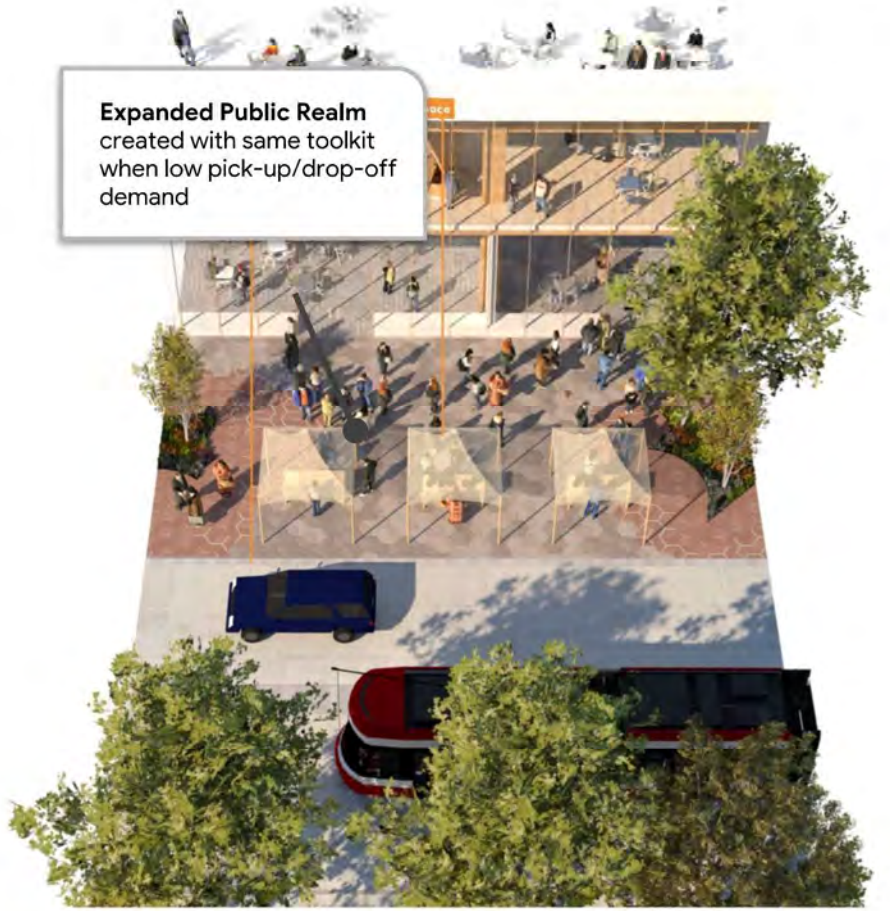


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Queens Quay Dynamic Curb

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Parliament Gateway Explorations

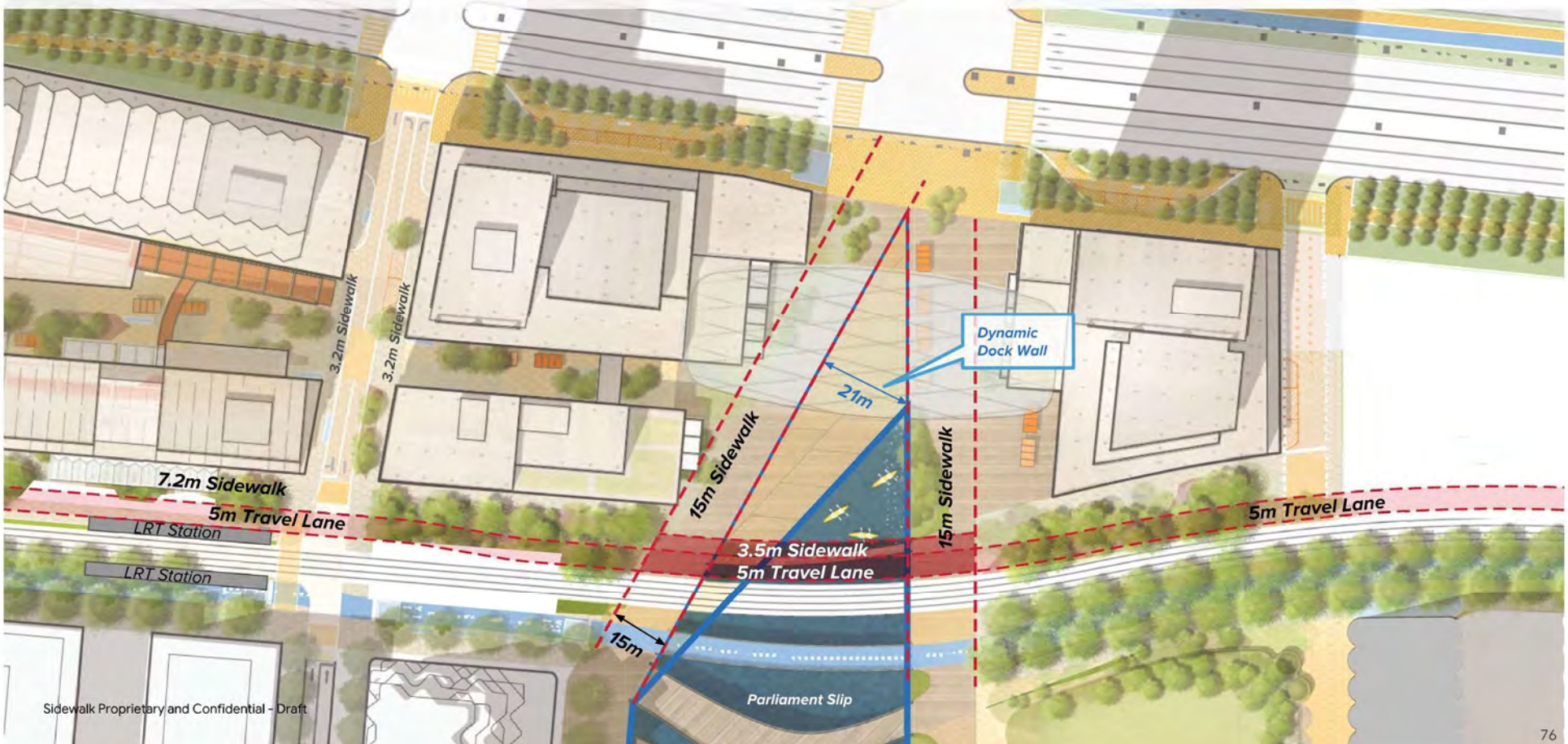
This section being updated based on City feedback. The approach will be to show multiple options for transportation and public realm in Quayside similar to how we showed multiple options for Queens Quay in RT3

75

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E-W Connection (One-way through Queens Quay from Cherry to Bonnycastle)

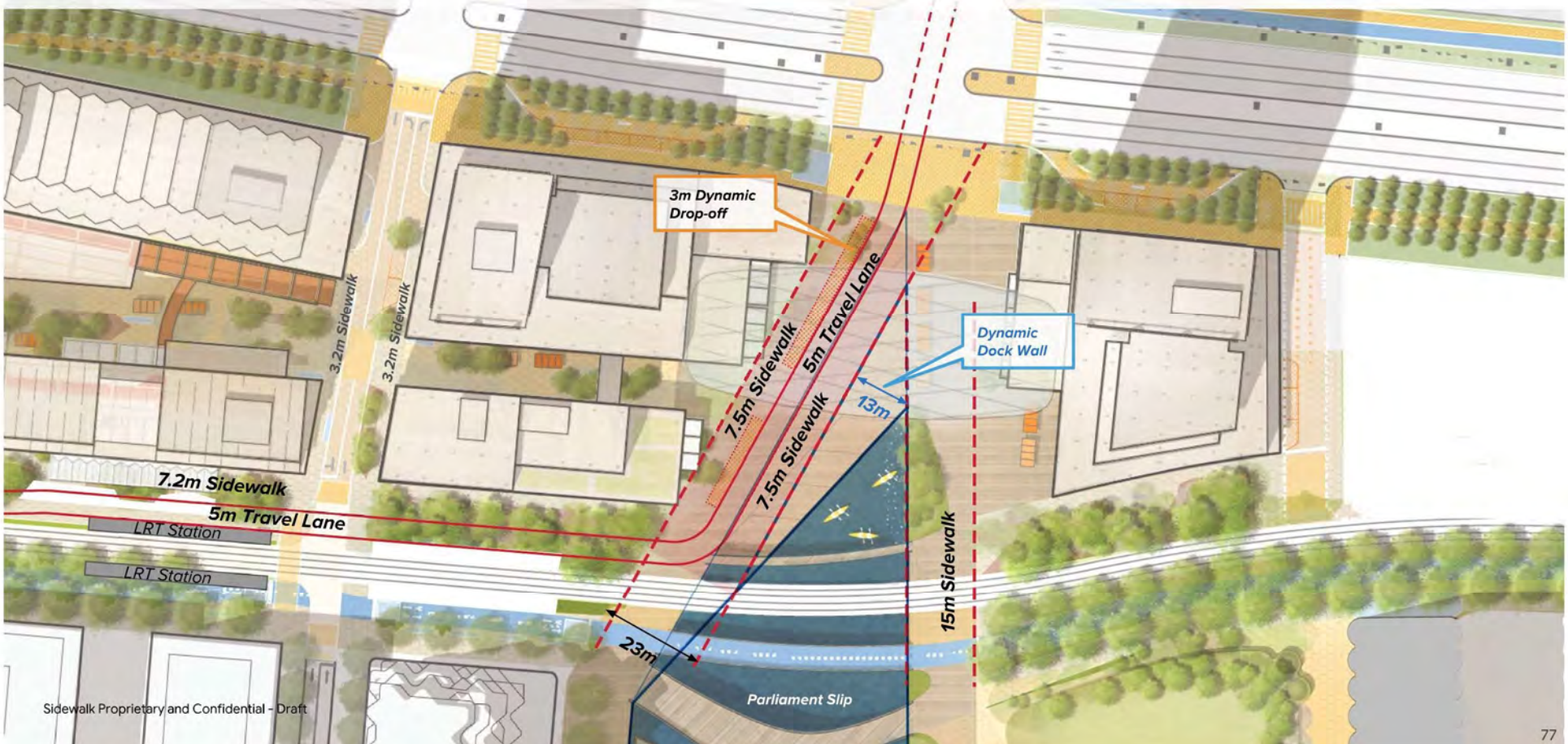
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N-S Connection (One-way w/ N-S connection through Parliament)

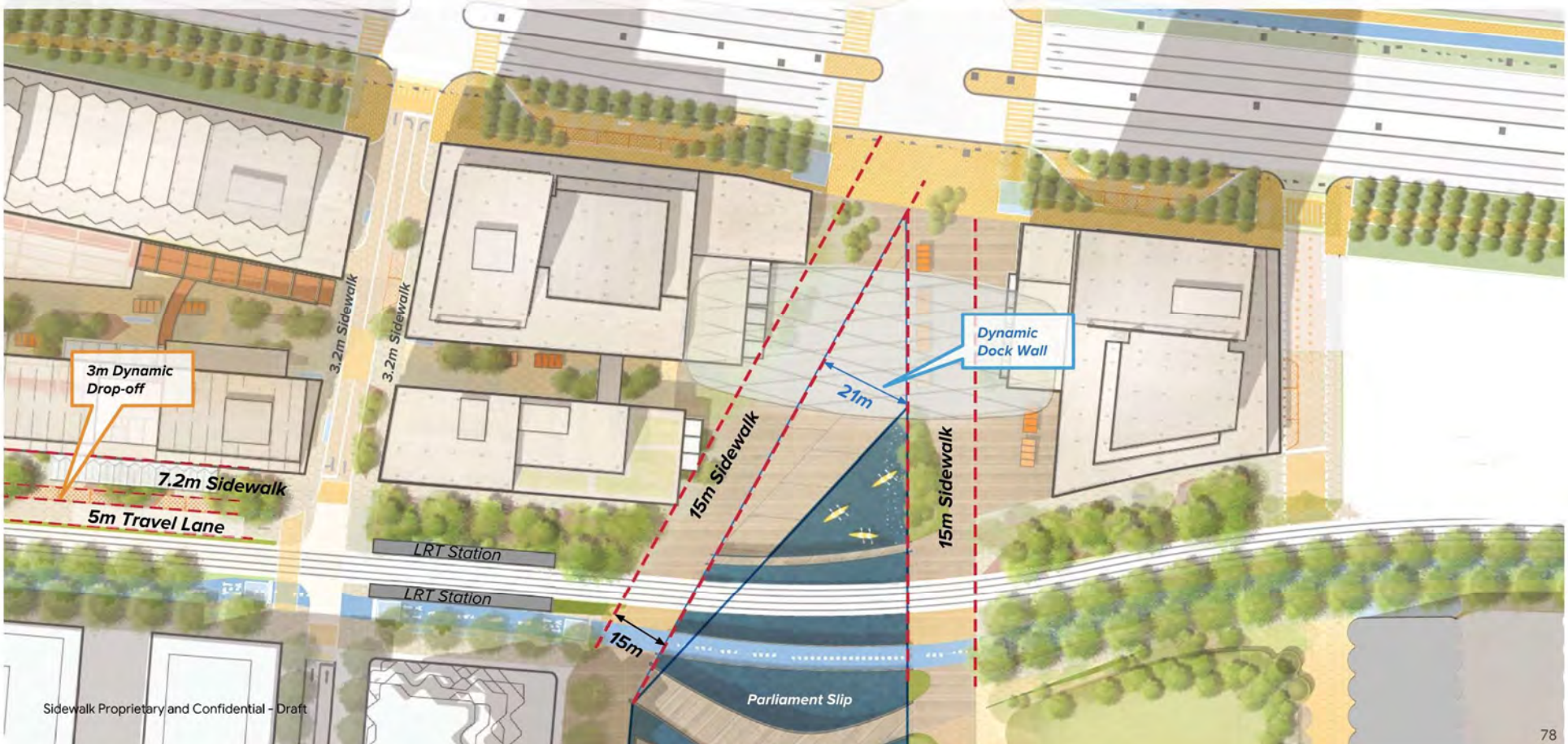


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Transit, Bikes and Peds-only in Plaza

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Toronto is in housing gridlock



Record Growth
Toronto is projected to grow by 1 million people by 2041

More Singles, Seniors, Multi-generational
Single-person households now #1 type in Canada

Soaring Prices
Average home 9X median household income in Toronto

Record-low Vacancy
1% vacancy rate, below Montreal, NYC, Chicago, LA

Condos and Investors
76K condos built in last decade, compared to only ~2K rental units

Affordability Out of Reach
No mid-range programs to increase affordability for middle-class families

Historical Defunding
Lack of existing programs and partnerships to address affordability needs for households of all incomes

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Sidewalk Toronto (SWT) objectives and guiding principles

Mixed-Income, Diverse	Commit to creating a mixed-income, diverse community
Scalable, Sustainable Test Bed	Serve as a global test bed to incubate scalable, sustainable change for housing affordability
New Options	Believe affordability also means meaningfully increasing choice in housing decisions for Torontonians
Specific to Toronto	Will respond specifically to unique Toronto market conditions
Not End-All Solution	Cannot single-handedly solve the local housing crisis, but can contribute to the creation of new solutions
Public & Non-Profit Partnership	Will partner with existing housing sector stakeholders, including all levels of government

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SWT will create more affordable & middle-income housing

What We Propose

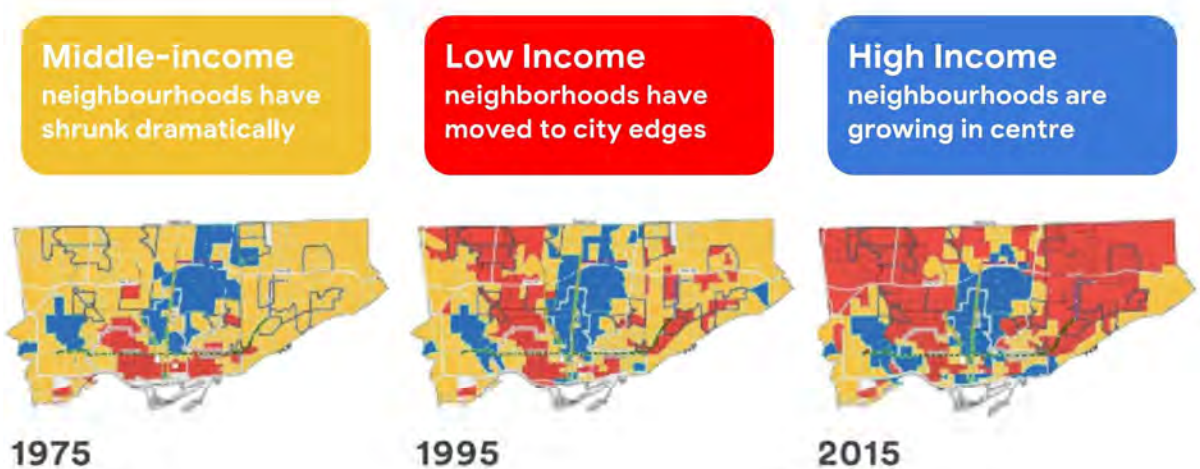
20% affordable housing, including 5% deep affordability

Up to 20% middle-income housing, including up to 15% mid-range affordable rental for households at 100-150% AMR

Mixed-income community

Why It Is Important

Three Cities Within Toronto (Hulchanski)
Updated 2015



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SWT will create more purpose-built rental housing

Why This Is Important

8,000 Estimated new purpose-built rentals needed each year until 2041 to close the gap

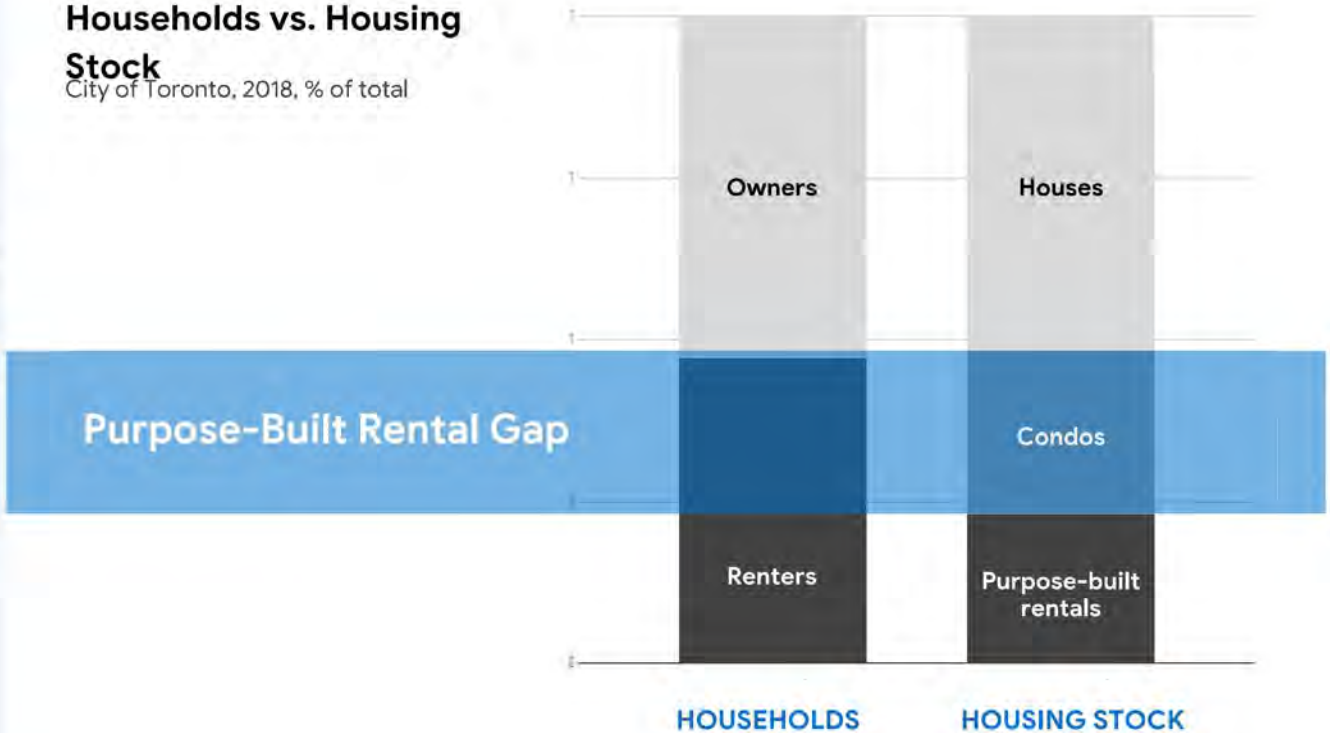
23% Only 23% of household stock is purpose-built rental, compared to 50% renters

3X Renters 3X more likely today to be in unsuitable housing than owners

10 yrs Estimated required time for middle-income households to afford homeownership

Households vs. Housing Stock

City of Toronto, 2018, % of total



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SWT will deliver more housing options (families, singles, & seniors)

What We Propose

Estimated 5% new shared equity option as an affordable homeownership approach

Targeting 40% family housing, of 2+BR units or more

Estimated 5% co-living housing as part of Quayside

What It Looks Like

SHARED EQUITY



New tenure model between renting and owning that increases suitability for families unable to reach traditional ownership

FAMILY UNITS



Larger units with at least 2+ bedrooms to fit growing families in Toronto

CO-LIVING

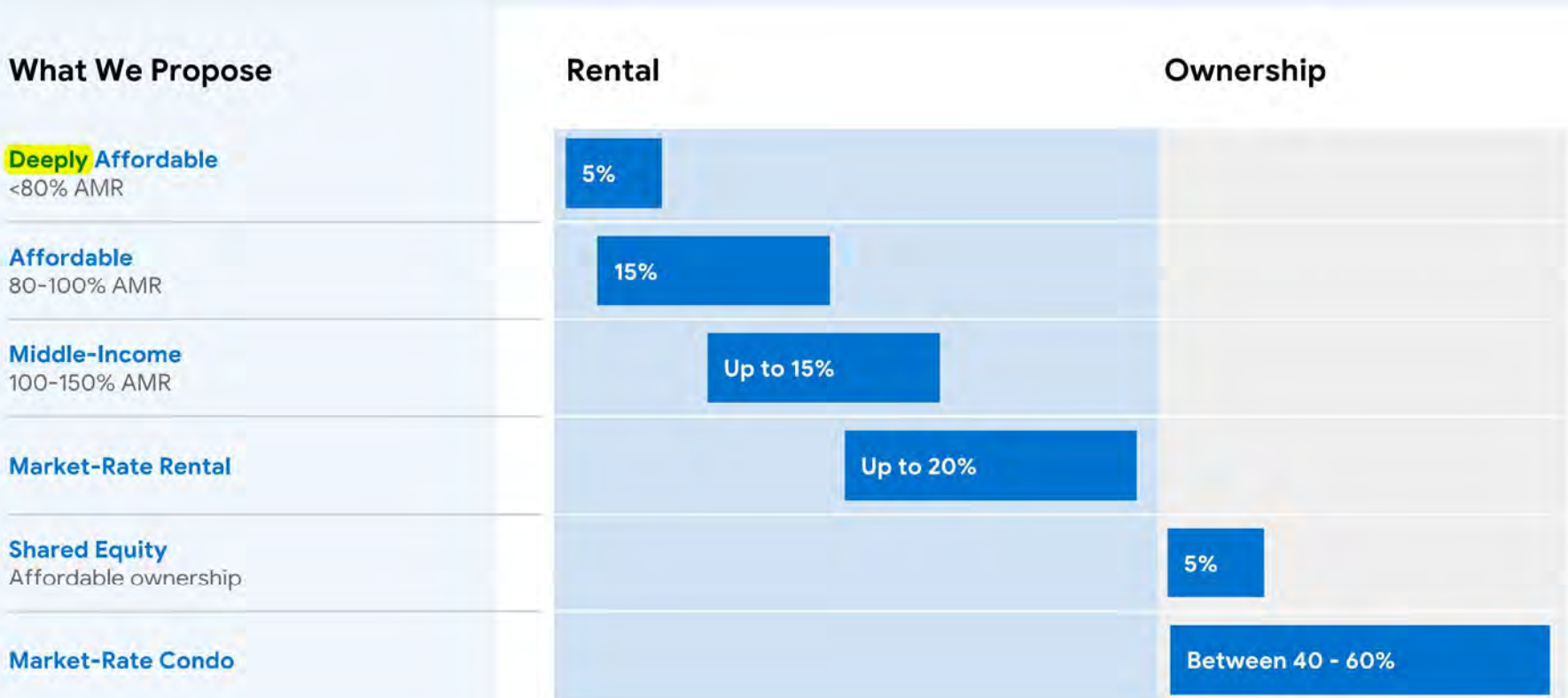


Communal housing type that pairs shared amenities with efficient units to enhance community for singles, seniors, and families

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Quayside Housing Plan [November 2018 DRAFT]

SIDEWALK TORONTO



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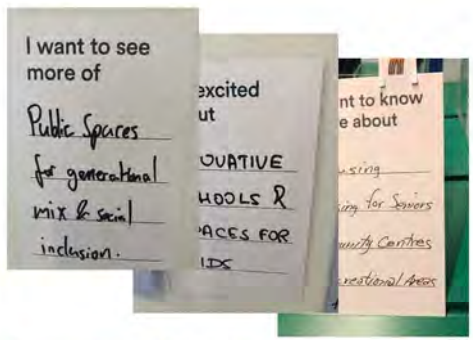
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Supporting People to Thrive in Their Everyday Lives

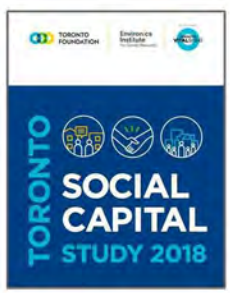
Sidewalk Toronto aspires to be a healthy urban community where all people can thrive and belong throughout their lives.

Social infrastructure is key to this vision.

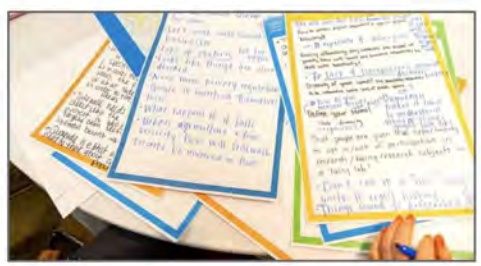












Vital Signs (Toronto Foundation)

TOCore Community Services & Facilities Plan

City's Youth Engagement Strategy

City's Seniors Strategy

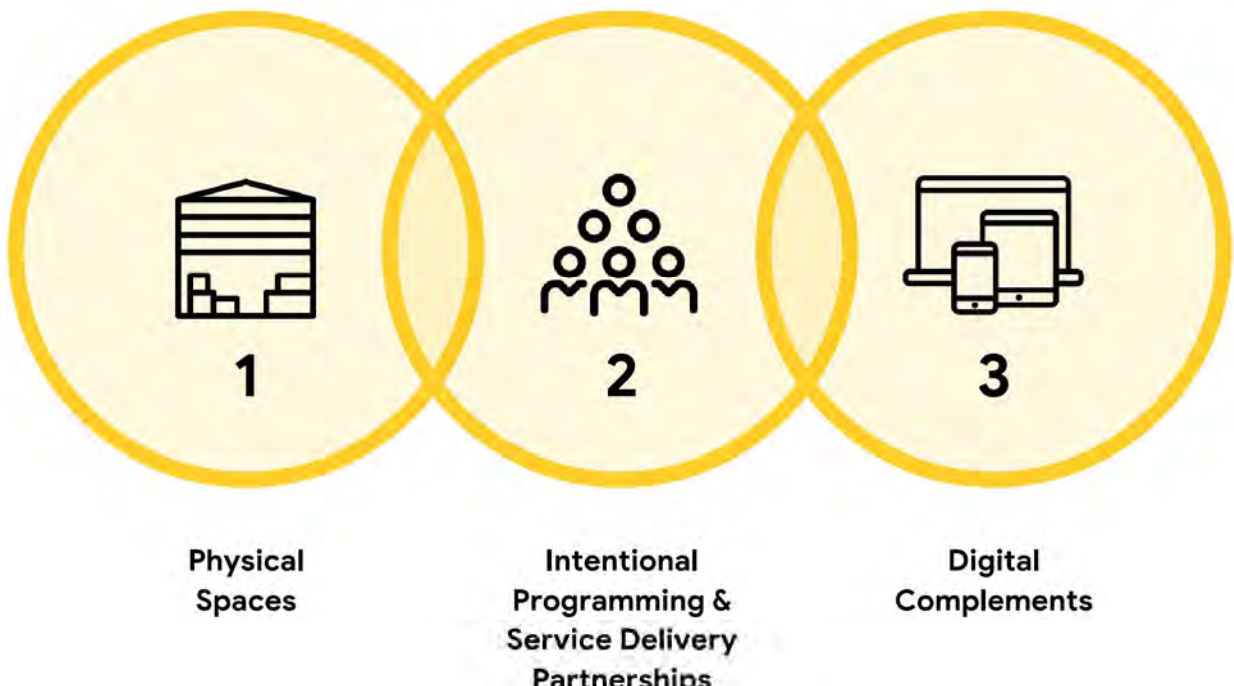
Toronto Community Feedback

Photos of feedback cards on the wall at 307

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Intentional and Proactive Social Infrastructure Planning

Social infrastructure is comprised of the the physical spaces, programming & services and digital complements that shape our interactions, organize our community, and provide the supports necessary to thrive.



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Supporting Holistic Community Well-Being

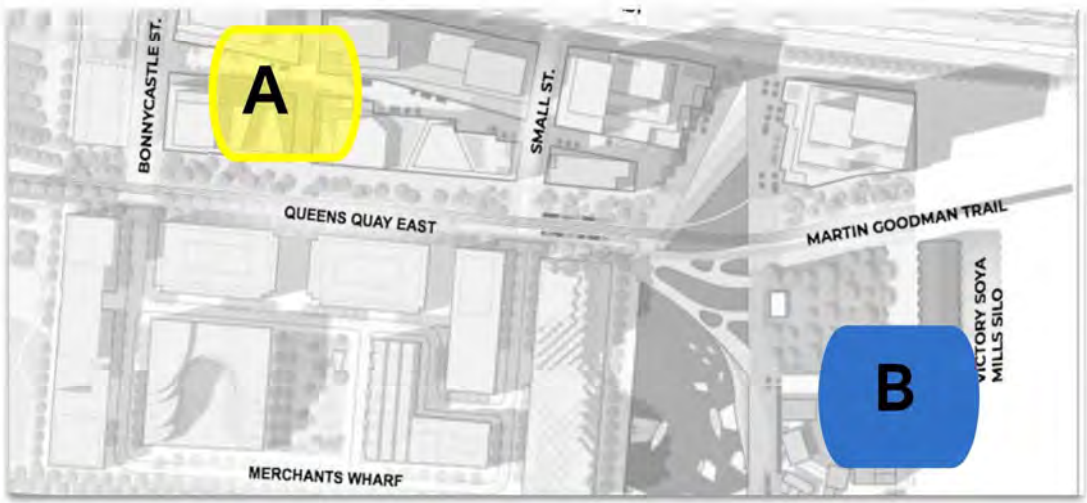
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1
Bringing Together Diverse Spaces and Services

Strong and sustainable social infrastructure is fundamental to the future of urban life.





A Care Collective



A Community Culture



A Civic Assembly



B The Opportunity Hub

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1 Future of community spaces

QUESTIONS

How do you help communities to stay healthy?

What current & future trends might influence the way we think about community health & well-being?

How do Torontonians think about caring for themselves and others?

What kinds of community spaces might enable the future we desire?

Worked with local consultancy, Idea Couture, and members of the community to build a perspective on the future of community-based health and well-being and to develop a concept for a community space dedicated to heath & well-being:



Conducted baseline research and future-looking horizon scan identifying 7 drivers and more than 140 signals of change



Conducted 20 interviews and ethnographic "immersions" with residents and service providers from across the city



Developed 90+ ideas with over 20 community partners at a day-long co-creation session



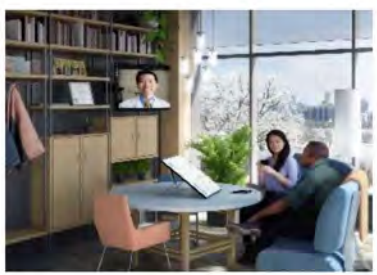
Imagined 6 future community spaces

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1 Quayside Care Collective

Exploring community based approaches to enhancing health, care + community connection.

LIVING WELL ON THE WATERFRONT



Health service delivery spaces: face to face & digital



Resource & learning library; digital health devices & interpreters



Traditional pharmacy + learning space + healthy living retail / cafe



Community living room: common space for gathering and pop-up services



Sanctuary spaces to disconnect, reflect and connect with nature



Prototyping space to connect innovators with visitors

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2 Intentional Programming & Service Delivery Partnerships

KEY PARTNERSHIPS

Sidewalk Labs does not intend to deliver core services in Quayside (health & human services, education, etc.)

Partnerships are key to our vision and we are working closely with local organizations to:

- Understand the local context
- Plan proactively and allocate space for service delivery
- Co-develop innovative approaches to service delivery

Exploring community based approaches to enhancing health, care + community connection.

HEALTH & WELL-BEING

Idea Couture - Community hubs of the future concept development

St. Elizabeth Health Care - Housing and service concepts for seniors

Non-profit/Government/Hospital - Health and community service planning and delivery

Environmental health research partnerships

LEARNING & CAREER OPPORTUNITIES

School board collaboration for primary school

Toronto Public Library collaboration for community programming

Maximum City partnership for secondary school educational programming

Sidewalk Works program creation for future skills development

CIVIC LIFE & ENGAGEMENT

Code for Canada partnership for inclusive usability testing group (GRIT)

Digital Public Square partnership to catalyze a Neighbourhood Association and build out civic digital tools

ARTS & CULTURE

Participatory Public Culture Curatorial and Artistic Residencies at 307

Commissions with ArtSpin and the Toronto Ink Company

Public workshops with ArtScape + Indigenous Design Community

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Collaboration with Toronto Public Library

PARTNERSHIP

Sidewalk Toronto and the Toronto Public Library are collaborating around shared vision and values, including:

- Serving a diverse population;
- Putting community needs at the forefront of planning; and
- Testing sustainable approaches with potential to scale

Sidewalk Toronto will work closely with local organizations to bring a range of programs and services to Quayside

COLLABORATION GOALS

- Promote **alignment and integration of services** between SWT's social infrastructure plans and TPL's new branch on the First Parliament site
- Explore **pilot opportunities**, while collaboratively developing long-term vision:
  - **TPL "pop-up" locations** in Quayside's ground floor areas
  - **Improved user experience for booking public spaces** for community uses
  - **Digital consult rooms** to allow residents to access a range of services
  - **Training opportunities** for future workforce skills
  - **Demonstrations and exhibitions** in TPL branches and at SWT's space at 307 Lakeshore Blvd E

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3 Digital Complements

Digital tools can strengthen social infrastructure and serve as valuable complements to physical spaces and in person programming.

SIDEWALK LABS BELIEVES

SWL believes that digital complements can enhance access, experience and connection and can serve as valuable tools to improve quality of life.

SIDEWALK LABS IS EXPLORING

SWL is exploring a range of partnership models to catalyze the development and adoption of digital complements to demonstrate the capacity of technology to improve health & well-being, education & opportunity, civic life & engagement and arts & culture in cities.

WE ARE WORKING

SWL is working to support local organizations and partner with the tech ecosystem in Toronto to develop or scale tools that:

- Enable Proactive Approaches to Health Maintenance
- Enable Community as Classroom vision
- Enable Community Influence & Investment
- ADD ARTS & CULTURE BULLET







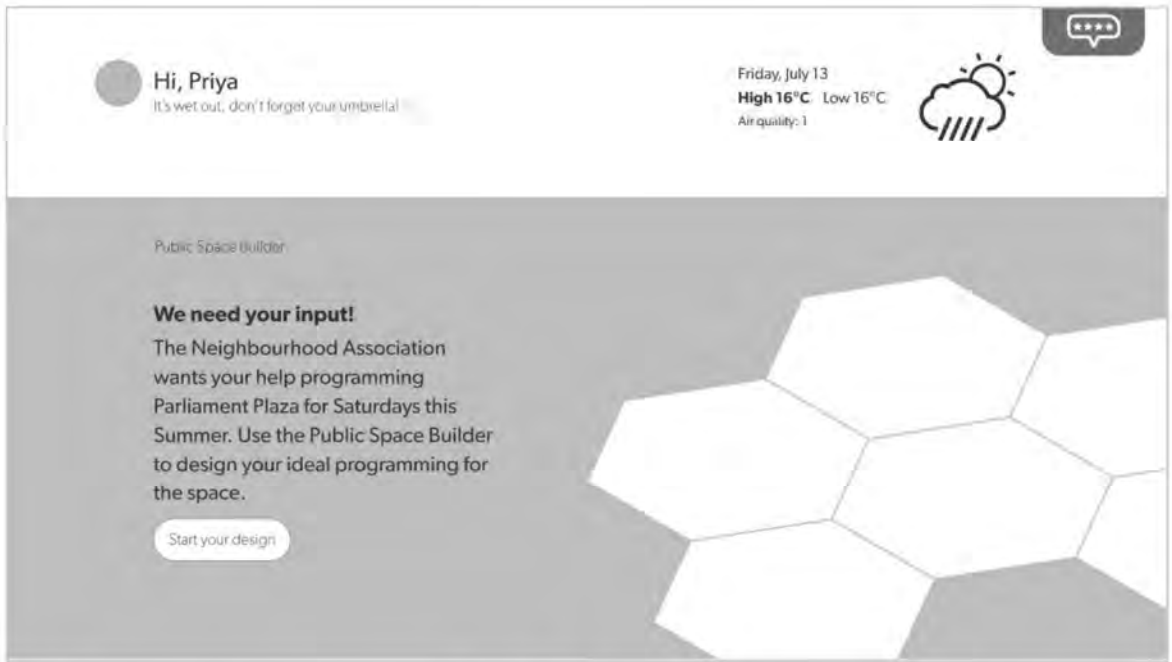
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Digital Complement Deep Dive

Community Influence with Digital Public Square

LOREM IPSUM

Community members will have the chance to influence the programming of public spaces, such as Parliament Plaza through suggestions for programming as part of an app called Sidewalk Toronto Decides, being designed with Digital Public Square.







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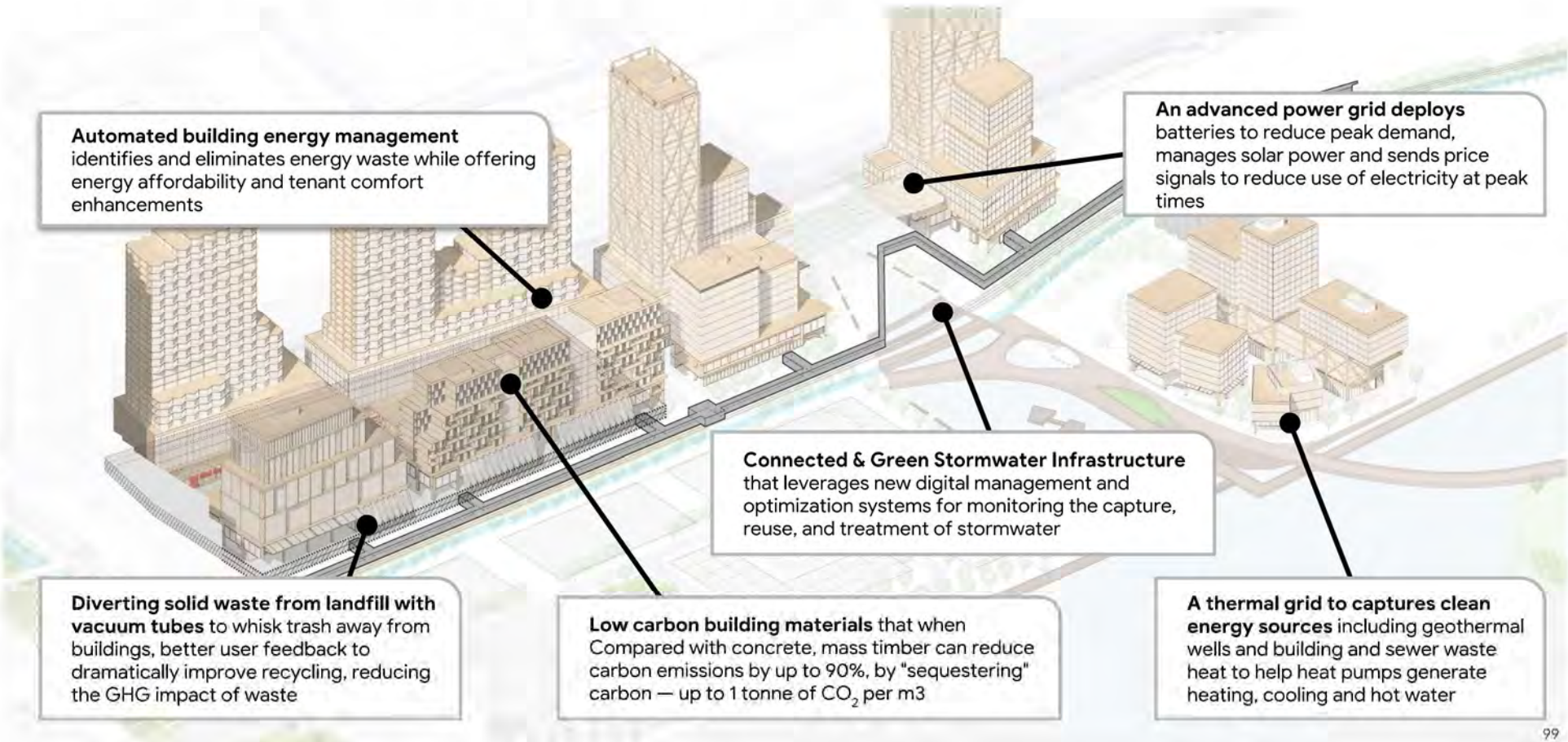
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Creating a Blueprint Climate Positive Neighbourhood

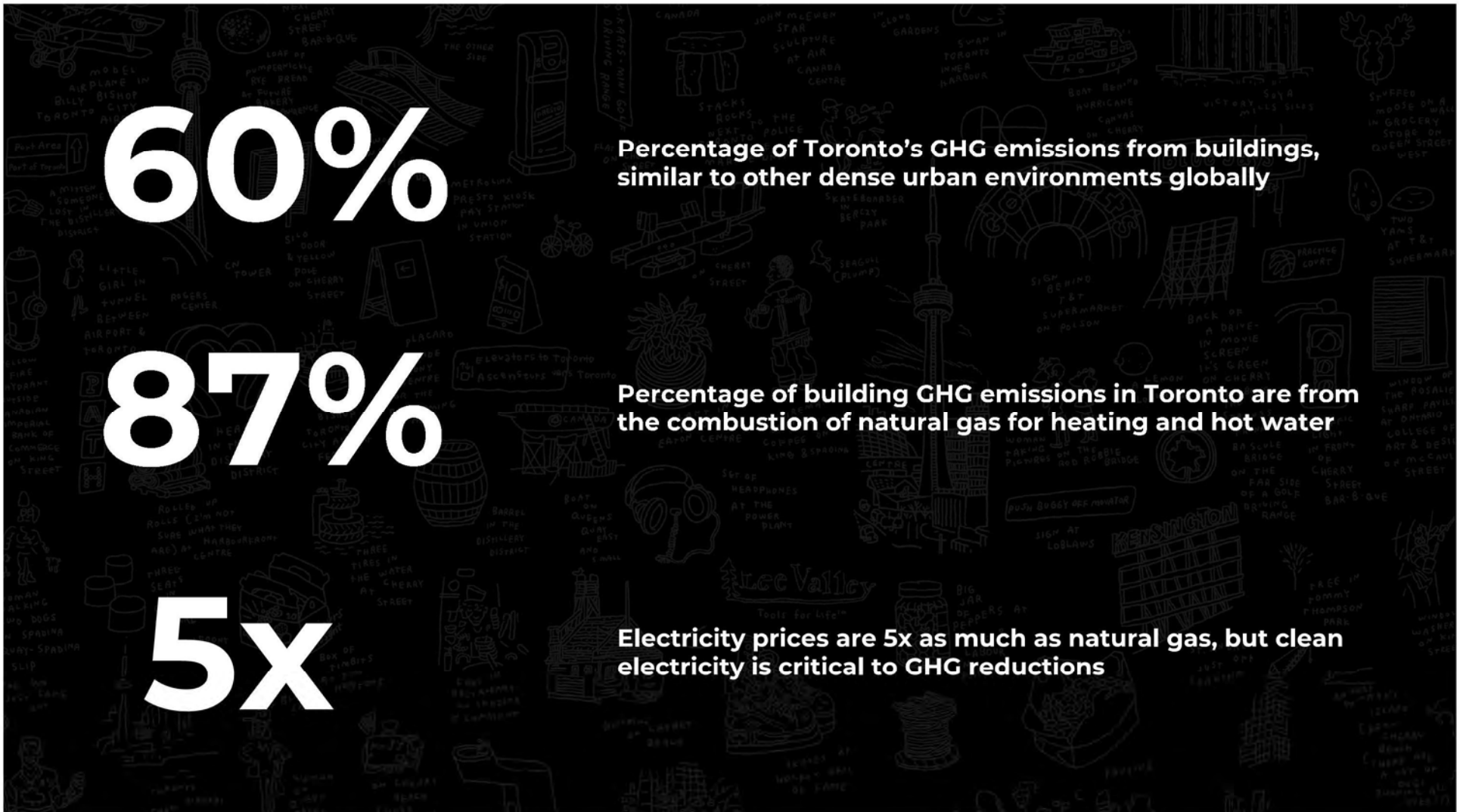
SIDEWALK TORONTO



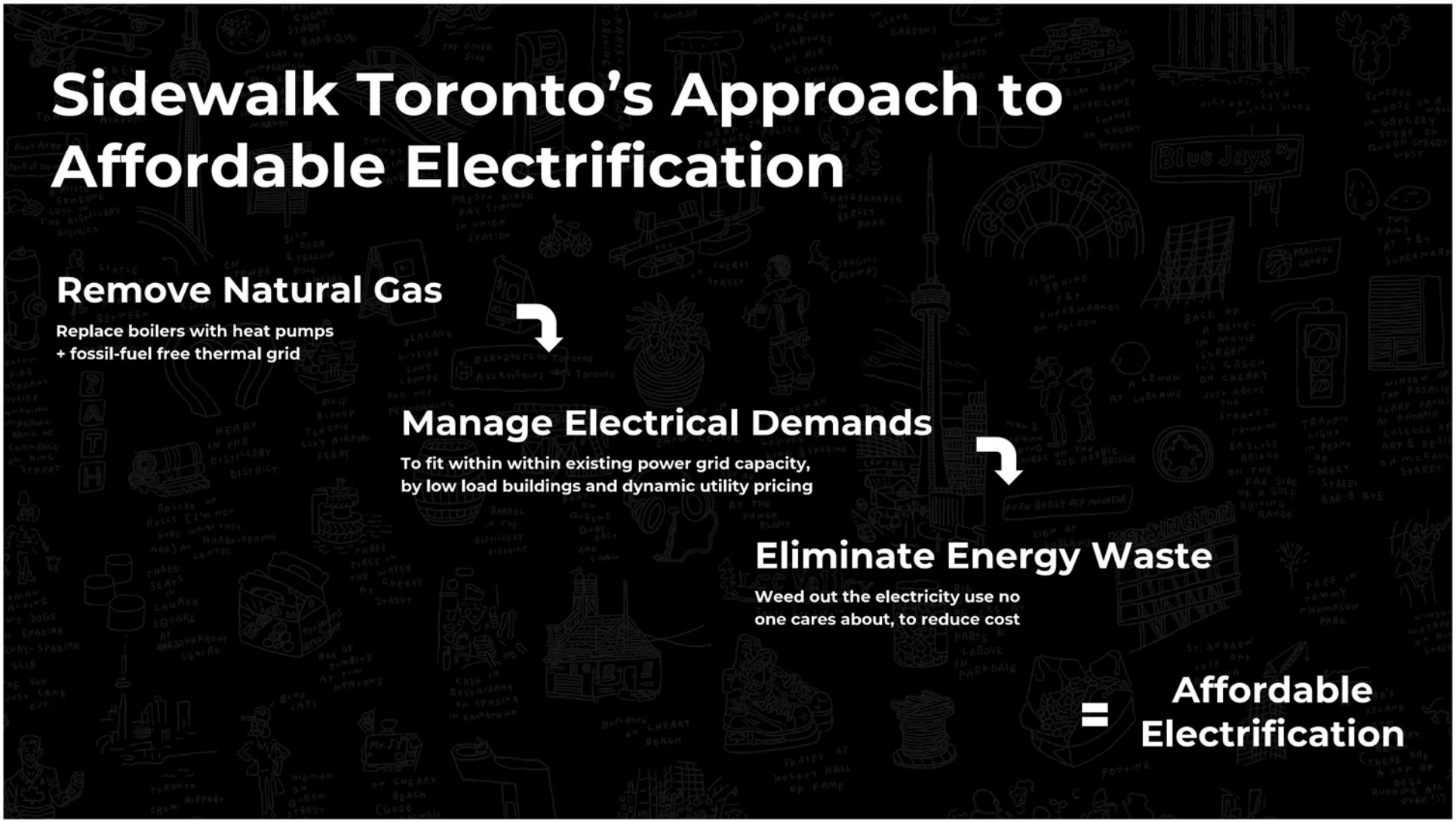
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Our Approach to Affordable Electrification

Technologies and infrastructure

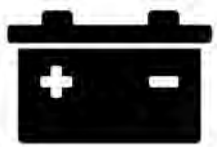
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Toronto Hydro distribution as the primary source of electricity



Rooftop solar PV will provide 9% of annual energy demand



Battery energy storage to manage energy bills and enhance resiliency



All-electric transportation including public transit, shared AV shuttles



Heat pumps for all heating and cooling, including geoexchange



Toronto Green Standards V3 Tier 3, coupled with outcome-based code



New rates to reward load-shifting and use of off-peak renewables



Automated response to energy rates, saving money & reducing GHGs

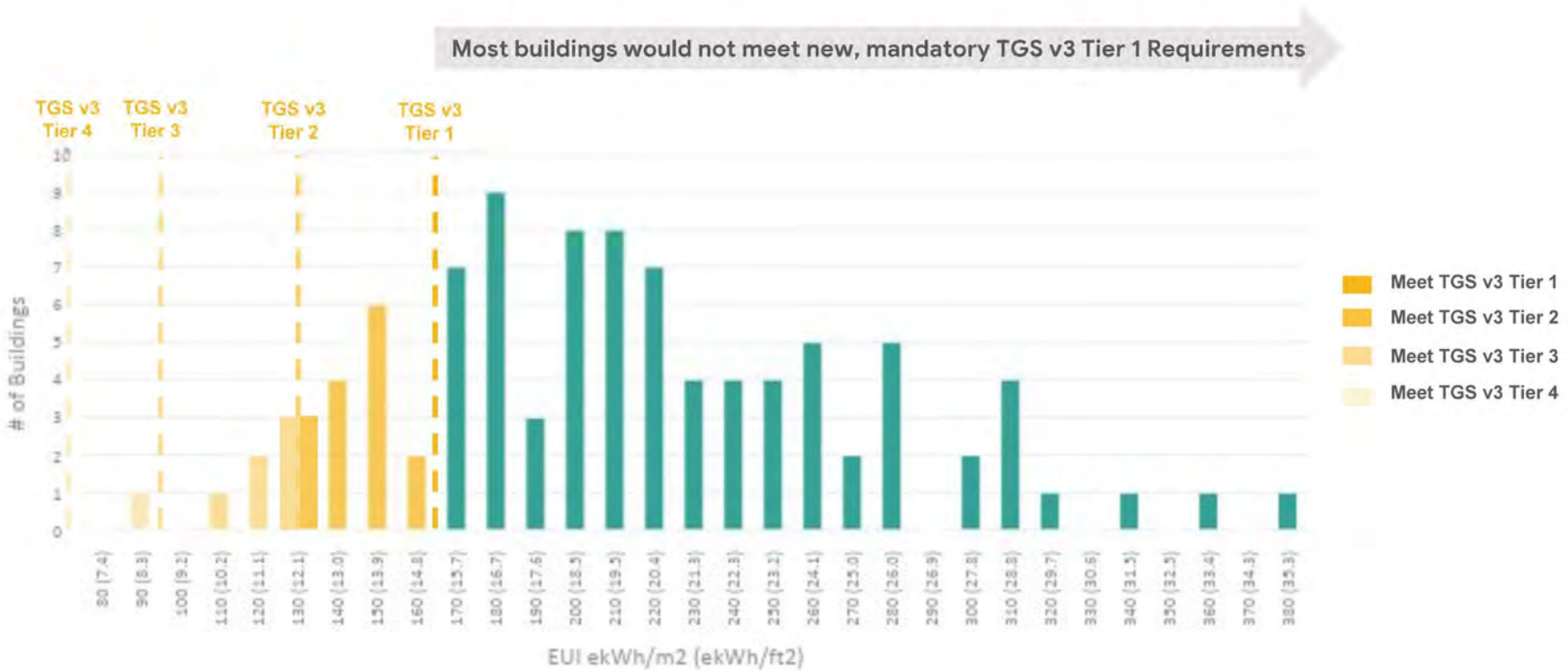
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How much energy do typical buildings consume?

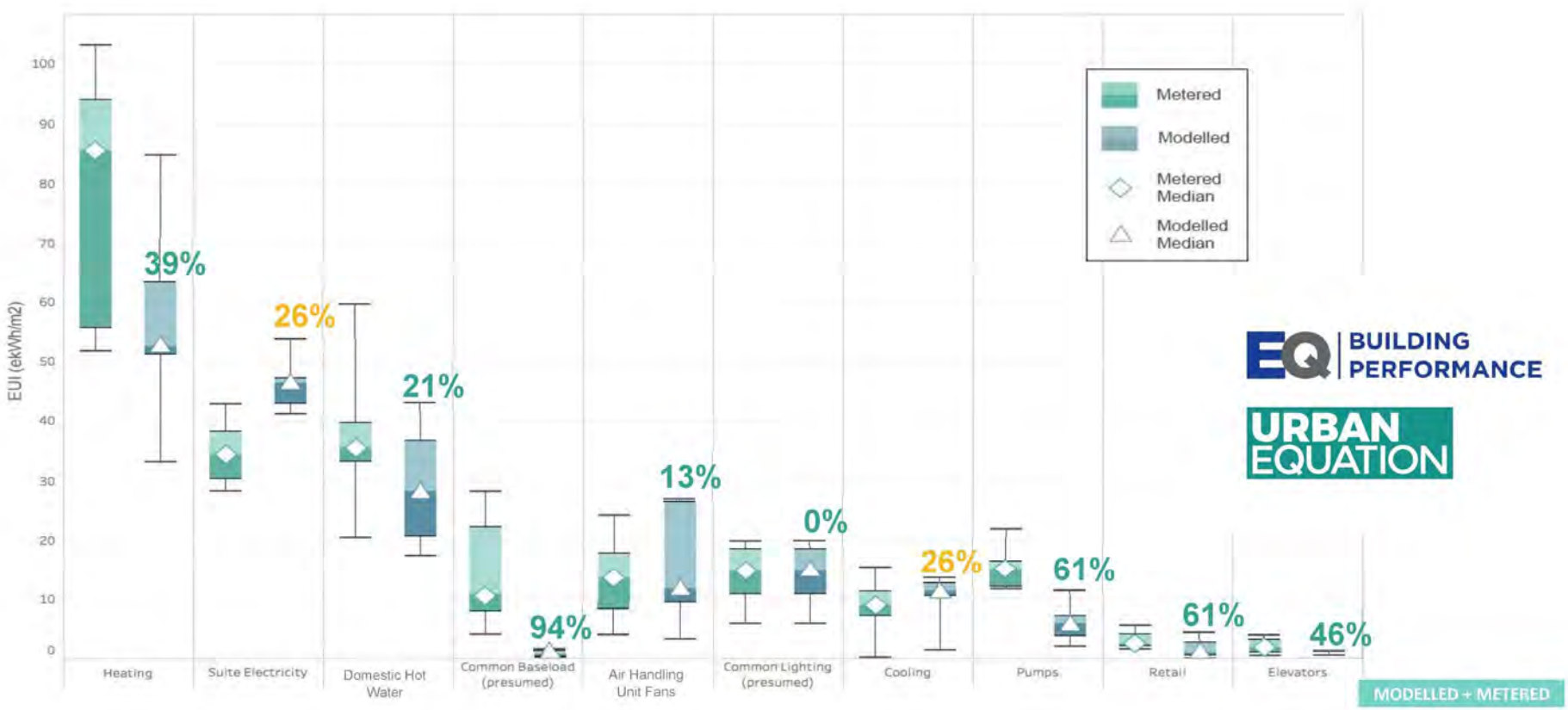
As it turns out, a lot.



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Modelled vs. Metered Energy Performance

24% more natural gas and 11% more electricity than predicted



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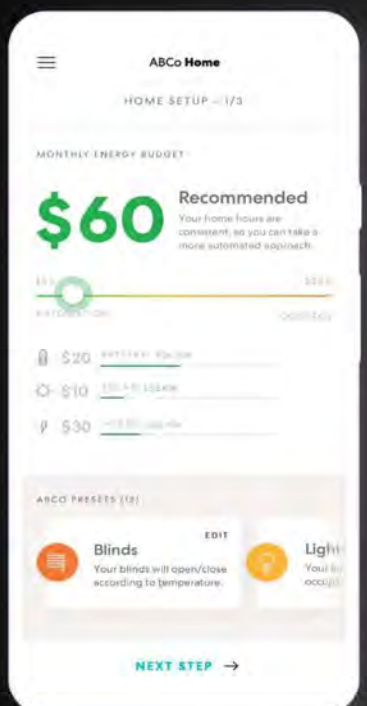
Target is a tool that compares a building's actual performance with City energy and GHG targets (e.g. Toronto Green Standard Tier 3) accounting for the factors that make buildings different:

- Occupant density
- Weather conditions
- Use (e.g. an energy intensive video production studio versus a quiet reading library)



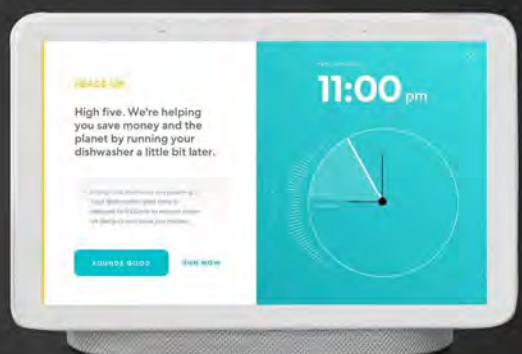
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ONBOARDING WITH YOUR UTILITY



AB Home lets you set your energy budget and live to it

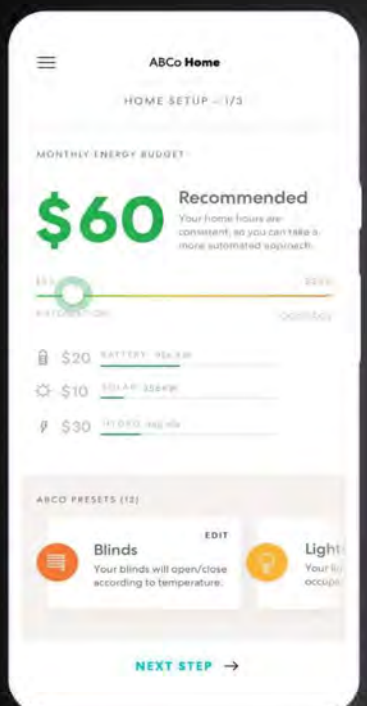
SMART ADJUSTMENTS



Scheduling activities throughout the home adjust based on peak energy times to prevent unnecessary cost and greenhouse gas emissions.

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ONBOARDING WITH YOUR UTILITY



AB Home lets you set your energy budget and live to it

FULLY RESPONSIVE



AB Office responds fully and fairly to tenant comfort requests

OPERATIONAL EFFICIENCIES



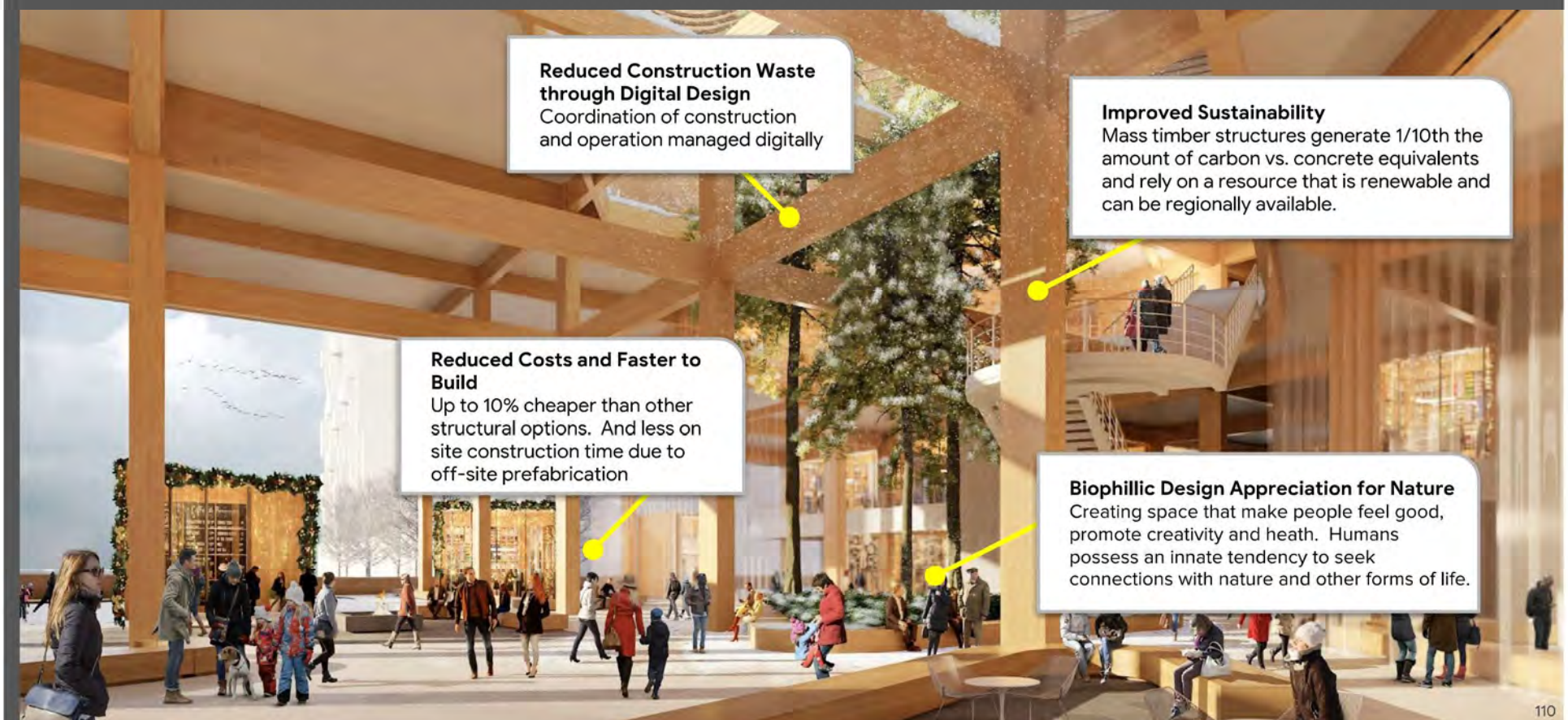
AB Core handles a lot of the nuisance in managing a building.

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Sustainable Construction Materials

All buildings made from Mass Timber

SIDEWALK TORONTO

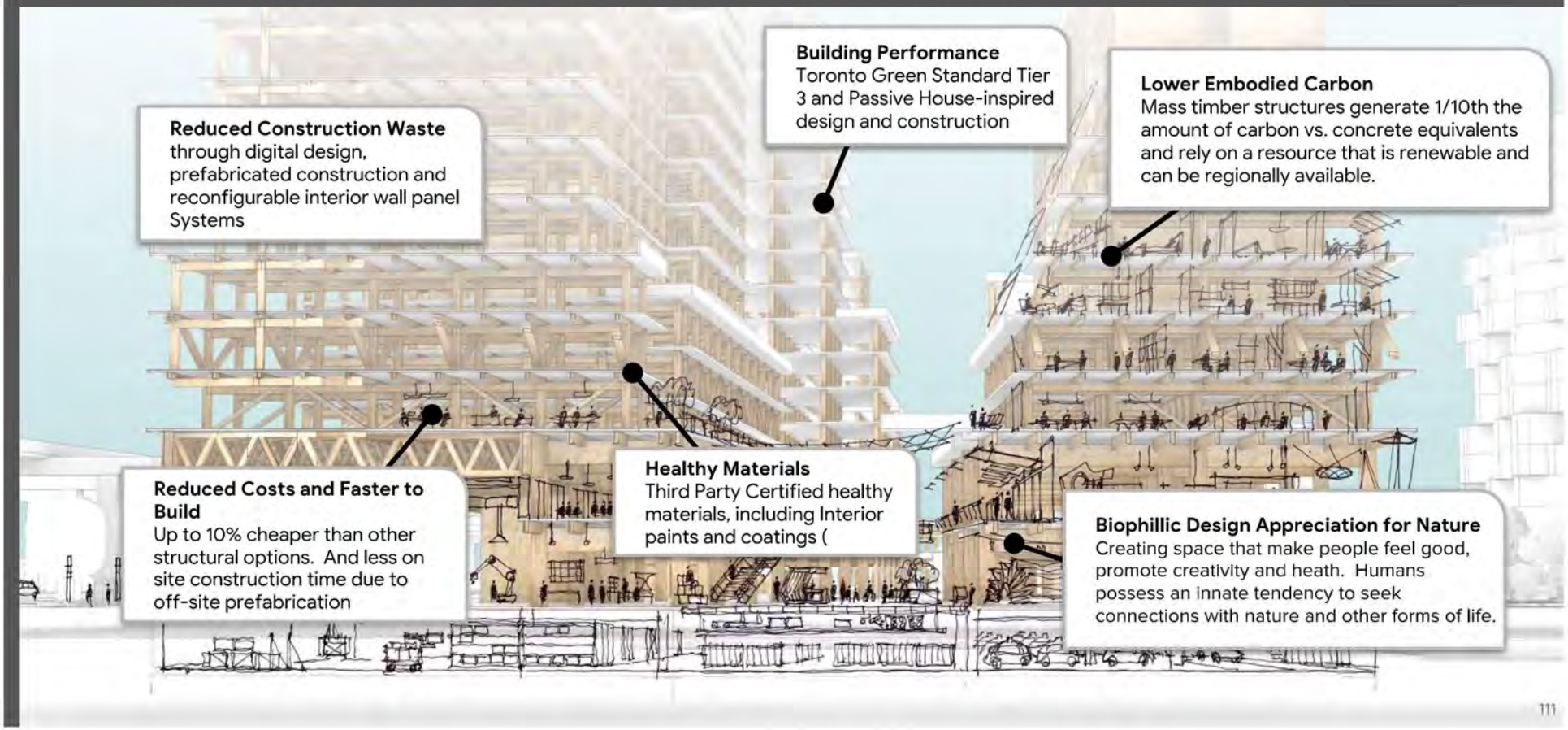


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Building Innovations

New materials, technologies and with greater flexibility for diverse uses

SIDEWALK TORONTO



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Healthy Building Materials

Building Innovations

SIDEWALK TORONTO



Healthy Materials Improved Indoor Air Quality

Provide healthy environments for people to thrive. Air pollution can cause both short term and long term effects on health and many people are concerned about pollution in the air that they breathe. Along with proper ventilation, materials introduced to the space maintain the healthy spaces possible.



Protecting Embodied Energy within products

Minimize carbon impact of materials- Targeting Materials that provide carbon sequestration and a low embodied energy. Looking to materials that are innately sustainable as natural products, that produce as little waste as possible during the manufacturing process and the end of life.



Biophilic Design Appreciation for Nature

Creating space that make people feel good, promote creativity and heath. Humans possess an innate tendency to seek connections with nature and other forms of life.

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Healthy Building Materials

Building Innovations

SIDEWALK TORONTO

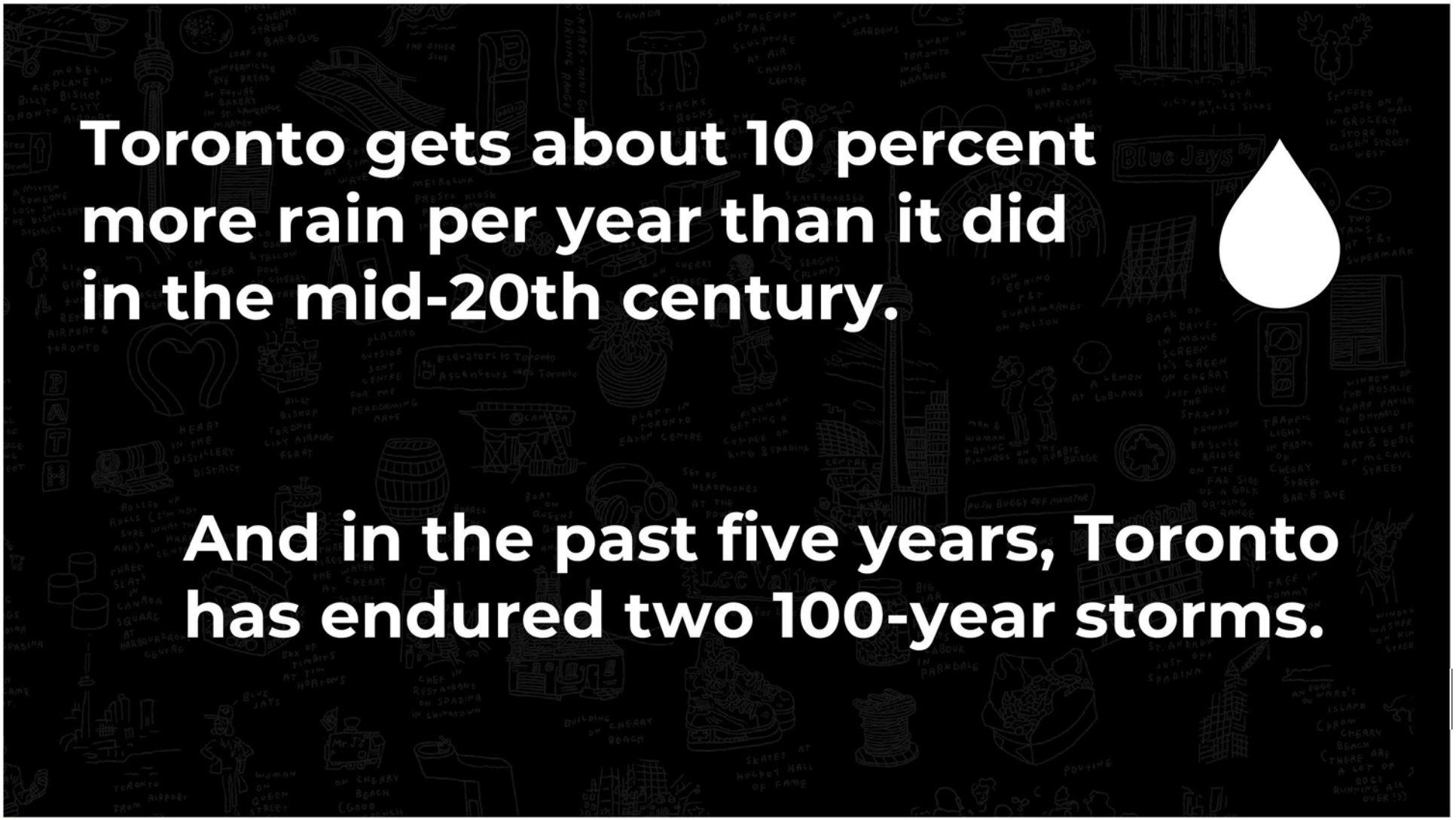
Third party certified adhesive, sealants, paints and coatings meeting the most aggressive **LEED** Requirements

Product Categories	Scope	Testing Criteria	Certification Label
Interior paints and coatings* (applied on site)	Applied to walls, ceilings, floors	CDPH Standard Method v1.1* OR AgBB**	SCS Indoor Advantage/ Gold OR UL Greenguard Gold OR Indoor Air Comfort Gold
Interior adhesives and sealants applied on site (non- flooring adhesive)*	Applied to all interior surfaces within the waterproofing membrane	CDPH Standard Method v1.1* OR AgBB**	SCS Indoor Advantage/ Gold OR UL Greenguard Gold OR Blue Angel OR EMICODE
Interior flooring adhesives and sealants applied on site*	Applied to all interior surfaces within the waterproofing membrane	CDPH Standard Method v1.1* OR AgBB**	SCS Indoor Advantage/ Gold OR MAS CG OR UL Greenguard Gold OR Blue Angel

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District-wide and digital green infrastructure

Our Approach to Stormwater Management

SIDEWALK TORONTO

Designing green infrastructure throughout the neighbourhood



Extensive green infrastructure maximizes capture of stormwater on site, in roadways, plazas, while enhancing the public realm

Using digital technology to monitor stormwater



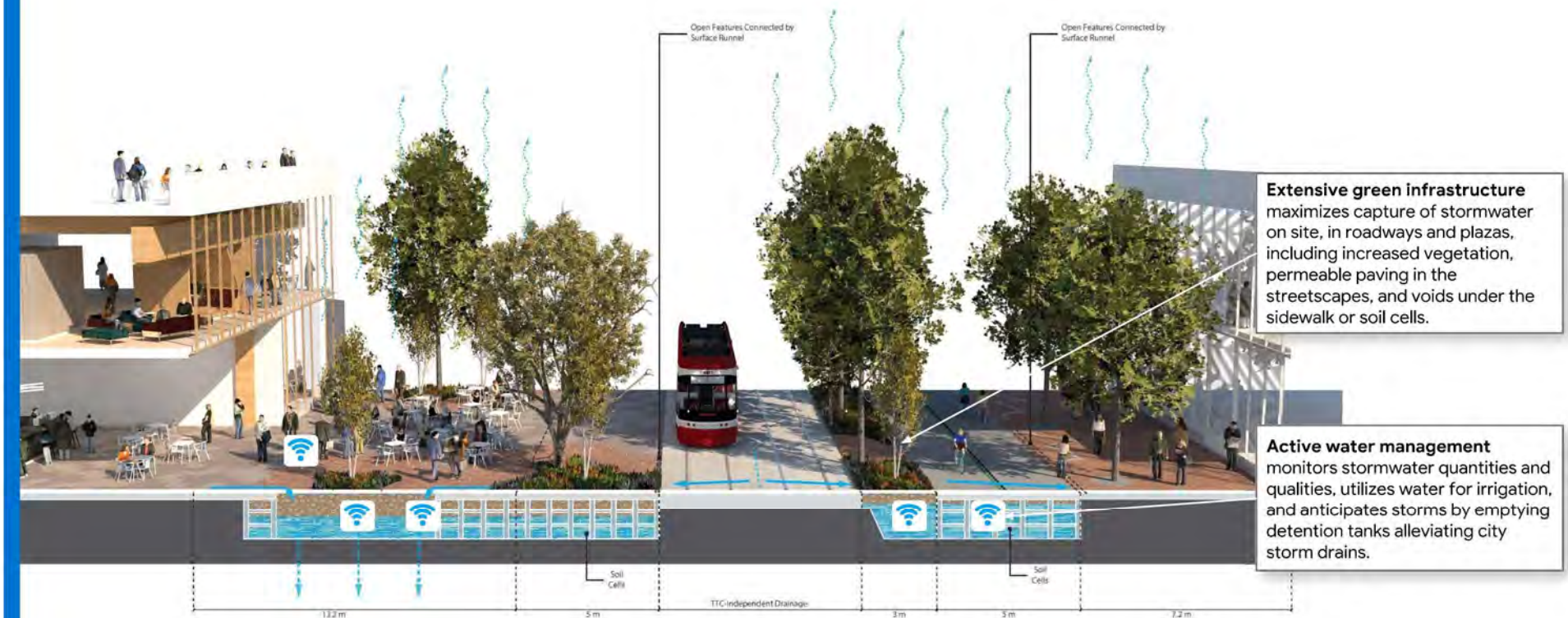
Digital monitoring can measure levels of salinity, empty tanks or cisterns in advance of storms, reducing need for hard infrastructure

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Queens Quay East

Our Approach to Stormwater Management

SIDEWALK TORONTO



Extensive green infrastructure maximizes capture of stormwater on site, in roadways and plazas, including increased vegetation, permeable paving in the streetscapes, and voids under the sidewalk or soil cells.

Active water management monitors stormwater quantities and qualities, utilizes water for irrigation, and anticipates storms by emptying detention tanks alleviating city storm drains.

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Human Benefits of Green Infrastructure

Our Approach to Stormwater Management

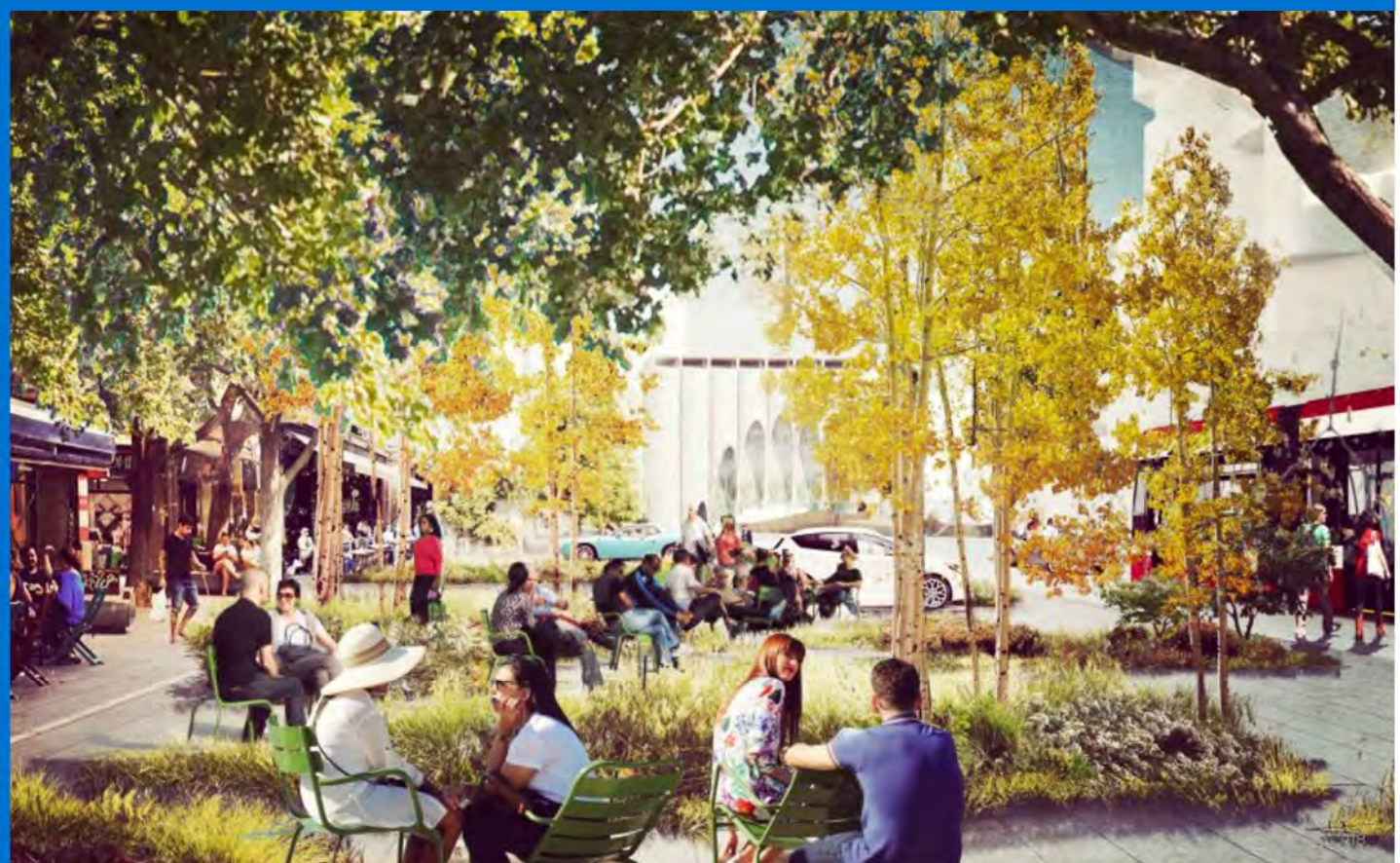
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Reduce Heat Island Effect
Plants shade surfaces, reflect radiation, and release moisture to cool the urban environment

Enhance Biophilia
Natural landscapes improve health and well being in the built world while embracing the seasons

Reconnect with Lake Ontario
Land-Water Scapes direct the public to the waterfront with the natural flow of streams

Design for Tomorrow
Permeable modular paving melds the artistry of the



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Site Plan

Our Approach to Stormwater Management



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A New Standard for Data & Privacy

The purpose for urban data collection in Sidewalk Toronto is to improve the day-to-day operation of the neighbourhood and to ultimately create a place that's more sustainable, accessible, and responsive to local needs. Four Key Components of Responsible Data Use

Civic Data Trust

An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Lab. With the Data Trust, we move away from entities, including Sidewalk Labs, solely owning and controlling these assets.

RDIA

Responsible Data Impact Assessment

Publicly auditable assessment for all public and private digital services required before data is collected and used.

Open Standards

Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation; the Data Trust might consider encouraging or requiring open standards, as well.

RDU Guidelines

Responsible Data Use Guidelines

Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation.

A New Global Standard for the Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

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Sidewalk Labs Responsible Data Use Guidelines

SIDEWALK TORONTO

People first, privacy first.

Our people-first approach to responsible data use will apply Canadian values of diversity, inclusion, and privacy as a fundamental human right. It will remain centered on impacts to citizens and the public interest.

Beneficial purpose.

Data collection and use should be purposeful, intentional, and tightly connected to the ultimate benefit that we are striving to achieve. We will not collect and/or use data for the sake of having data.

Transparent.

We will be transparent about what we are collecting and why, clearly explain the intended benefit of that data use, and if the purpose changes, we will communicate what has changed and why.

Open.

Whenever possible and without compromising personal privacy, we will seek to make the data collected as part of Sidewalk Toronto open and accessible, with the goal to enable innovation and entrepreneurship.

Proactive engagement.

We will proactively engage the community on data use and will continue to listen and learn from the community as we grow and develop.

Community trust.

We want the community to trust that our projects, products, and services are developed with its needs in mind. Having good data-handling practices and minimizing breaches of trust is therefore integral to our development process.

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Responsible Data Impact Assessments

The Responsible Data Impact Assessment (RDIA)
is a process we are implementing to apply the principles in a structured, efficient, demonstrable way.

It's also how we implement Privacy by Design.

RDIAs will be submitted to the Civic Data Trust.



Responsible Data Impact Assessment

(submitted to Civic Data Trust)

- **PURPOSE** of the project/product/service, who is involved and who is accountable
- **DATA**: a full understanding of the data, sources, data use and parties involved
- **IMPACT** on parties and, in particular, individuals
- **ANALYZE** risks and benefits

Decision
Whether an appropriate balance of benefits and mitigated risks supports the data processing activity

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Civic Data Trust

A Civic Data Trust is a model for stewardship and management of data and digital infrastructure that approves and controls the collection and use of data for the benefit of society and individuals.

A Civic Data Trust is particularly useful where data is being collected and used in an urban environment and there are challenges in obtaining meaningful consent.

The Civic Data Trust is an independent third party that ensures that value from data goes to the people, communities, government, industry, and society from which it was collected, and that data privacy and security are protected.

A Data Review Board, assembled of diverse members of the community, would monitor and enforce data collection and use.



Other cities and countries around the world (e.g., Canada, Barcelona, Estonia) have implemented variations of data trusts.

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Defining Urban Data

Data collected in the physical environment, particularly in public spaces, will be the domain of the Civic Data Trust.

Urban Data is data collected in a physical space in the city, which includes:

- Public spaces, such as streets, squares, plazas, parks, and open spaces
- Private spaces accessible to the public, such as building lobbies, courtyards, ground-floor markets, and retail stores
- Private spaces not controlled by those who occupy them (e.g. apartment tenants)

Urban Data is different from other data and requires a different approach because:

- It could reasonably be considered a public asset.
- Individual consent is hard to achieve in public or publicly accessible spaces, unlike when individuals provide data in more traditional contexts.
- Existing requirements attached to the collection of Urban Data only apply when it is identifiable, and are often not followed; there are no requirements attached to the collection of Urban Data that is not personal information.
- The community has the right to expect reasonable protection and proper use of data collected in these spaces.
- Such data raises potential community surveillance concerns.
- Urban Data is anchored to geography, unlike data collected through websites and mobile phones, and lends itself to local governance.

HOW OUR FOCUS ON URBAN DATA REFLECTS WHAT WE'VE HEARD

It acknowledges the consent challenge involved with Urban Data and puts in place a mechanism to obtain "community consent" by:

- **Placing** governance and oversight in the hands of an independent entity that represents the community interest
- **Requiring** Privacy by Design
- **Providing** transparency for the community
- **Enlarging** the types of data that deserves protection beyond personal information to data that has the potential to impact people
- **Focusing** on the entire ecosystem in Quayside, enabling responsible data use and across the board privacy protections

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Three example use cases for us to discuss

1



2



3

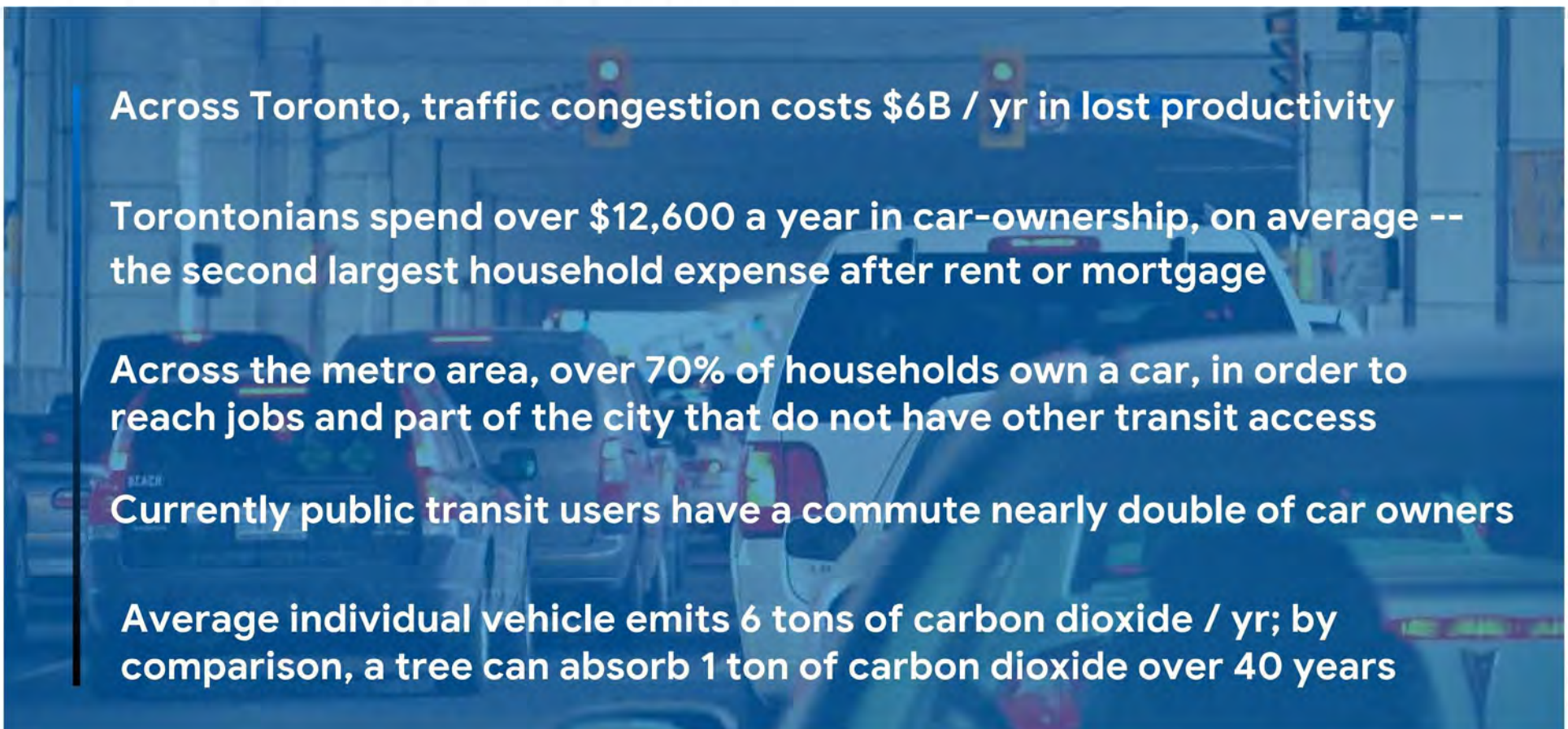


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Reduce congestion and create safe streets

Mobility challenges in Toronto

1



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Modus: Reimagining urban movement

CHALLENGES CITIES ARE FACING



Deaths from transportation continue to rise



Access to transportation can be highly variable, based on income, ability, or circumstance



Most cities do not optimize for multiple modes of transportation within the same location



Customers lack full transparency into personal mobility options, oftentimes overpaying

OVERVIEW OF THE PRODUCT

PRODUCT DESCRIPTION

A system comprised of hardware to understand and manage the mobility network, and software to model, optimize, & communicate.

The system will flexibly adapt to:

- Existing modes (cars, bikes, pedestrians)
- Emerging modes (scooters, drones, AVs)
- Future modes we can't predict today

USE WITHIN QUAYSIDE / TORONTO

Modus will shape mobility for an efficient and safe transportation network, using techniques such as:

- Active, dynamic management of the curb
- Adaptive signals and dynamic streets informed by real time/projected demand
- Vehicle platooning and routing recommendations

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TECHNOLOGY EXAMPLE | NEW MOBILITY

Modus: Targets drivers of traffic congestion and optimizes future AV fleet needs

APPLICATIONS AND USE CASES

- **Dynamic Curb:** a system that uses real-time, historical, and projected data in combination with input from traffic management operators to optimize the regulations and pricing of the curb
- **Signal optimization:** smart traffic signals for prioritized pedestrian/cyclist traffic and movement in "green waves"
- **AV-Dominant network optimization:** network information and optimization engine, that broadcasts data in a standardized format to AVs and other connected vehicles
    - Real time information (e.g. curb availability, curb/road pricing, signal timing, road closures, construction zones, etc)
    - Routing/network optimization recommendations (e.g. platoon availability, suggested routes, etc)

Example: Dynamic curb in Quayside will help manage drop-offs and pick-ups, one of the largest drivers of traffic congestion



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Building Energy Challenges in Toronto: Reduce Energy Use in Buildings

SIDEWALK TORONTO

Buildings make up 60% of Toronto's GHG emissions

40%-60% of building energy use is uncontrolled

Even controlled building energy is managed by predetermined schedules and settings, in a "set it and leave it" approach

Toronto has one of the cleanest electrical grids in the world. Your electricity produces nearly 75% less GHG emissions than gas, but is not widely adopted due to costs



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Autonomous Building Systems: Reduces largest GHG emissions drivers of

CHALLENGES CITIES ARE FACING



Building make up 60% of Toronto's GHG emissions. 40%-60% of building energy use is uncontrolled.



GHG intensity of gas is 183 g CO2/ekWh so we are using electricity (50 g CO2/ekWh), solar, and thermal, all more expensive than gas.



The existing market is fragmented, across solutions and even naming conventions, preventing a holistic view and inability to control of energy.



Most building energy is managed with predetermined schedules and temperature settings, in a "set it and leave it" style.

OVERVIEW OF THE PRODUCT

PRODUCT DESCRIPTION

A suite of products that automates monitoring and control of devices and equipment to eliminate energy waste, lower energy and operating costs 20%, offer labor efficiencies, and increase comfort across homes, offices, and buildings.

The user-centric product automation partnered with dynamic energy rates will manage costs and prevent wasted energy.

Aims to create an affordable climate positive community.

USE WITHIN QUAYSIDE / TORONTO

Energy management automation and continued learning for systems across Quayside buildings that make comfortable, productive environments.

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TECHNOLOGY EXAMPLE | CLIMATE POSITIVE

Autonomous Building Systems: Specific products target different customers and use cases

APPLICATIONS AND USE CASES

Office workers can have increased transparency on how their space is managed and the ability to request temperature changes and lighting adjustments.

Residents can manage their energy budgets without doing work. The system learns their preferences to create the optimal conditions for waking up, sleeping, and family time, without ever leaving the AC, lights, or heat on unnecessarily.

Building operators are empowered with system insights beyond dashboards and false alarms. Tenant temperature complaints are handled automatically, maintenance requests are placed preemptively, and HVAC systems are controlled based on occupancy and not pre-scheduled based on leases.

Energy regulators can have actionalable comparative data on how buildings are performing against energy and GHG targets, accounting for occupancy and function.

Toronto Hydro has a better understanding of energy uses and systems that respond to demand management.

Example: In Resident use case and product, individuals receive series of "nudges" to manage energy budgets



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Making Climate Positive Possible in Homes: Reduce Energy Use in Buildings

HOME SCHEDULER

Created to help manage energy cost and GHG emissions from residential spaces

Takes a proactive role in managing the home, operating systems, appliances, etc. when costs are low or clean energy is available

Generates a data feed for homeowners to understand the actions being taken - and to reject them if they wish

Residents are able to opt out of this system

ONBOARDING



Residents can adjust their energy budget to suit their needs and save energy.

NOTIFICATION



Residents can accept energy-saving changes, or explore other options if it doesn't fit their needs.

AUTOMATION



Residents can adjust their automation setting to fit their needs.

SMART ADJUSTMENTS



Scheduled activities throughout the home adjust based on peak energy times to prevent unnecessary greenhouse gas emissions.

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How It Works for Resident Homes: Reduce Energy Use in Buildings



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Public Life Studies: Ensuring public spaces work for people

Public Life Studies are a fundamental part of TOCore, Toronto's new plan for downtown. They are used to help evaluate the King Street Transit Pilot and are a key input into the revitalization of David Crombie Park.



PUBLIC SPACE INCUBATOR











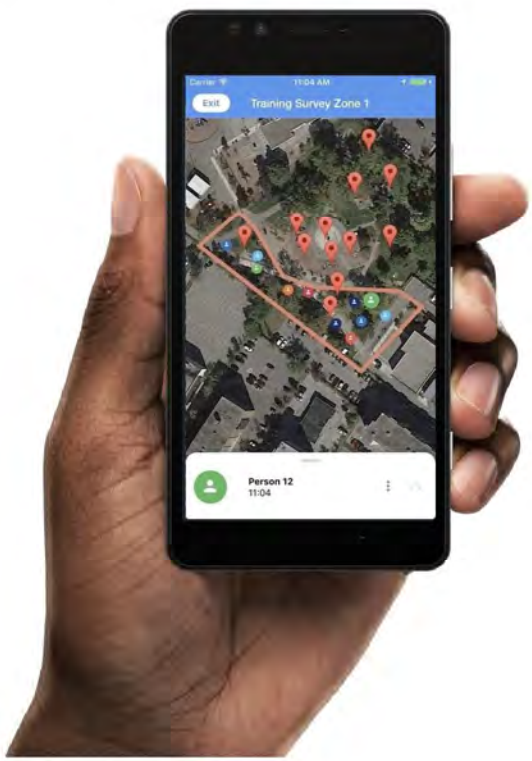
Park People's *Public Space Incubator* program is supporting new ways for communities in Toronto to experiment enlivening and activating the public realm.

We worked with Park People and one of their awardees, the Thorncliffe Park Women's Committee, to prototype an app that makes it easier to collect the public life data needed to understand the impact of their efforts.

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Commons app: Ensuring public spaces work for people

A simple map-based interface lets study volunteers quickly record observations, eliminating inefficiencies that come from paper-based data collection:





A volunteer collecting data in RV Burgess Park



Map-based visualizations can help planners and community members see patterns in how spaces are being used

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Sidewalk Labs: Objectives

SIDE WALK LABS

Establish the world's most innovative urban district

Attract and sustain a diverse twenty-first-century economy, including a cluster focused on urban innovation

Enable a meaningfully superior quality of life for a diverse population of residents, employers, and employees

Provide financial viability for long-term investors

Create a replicable model that can be scaled to cities across multiple geographies

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Sidewalk Labs: Why We Are Here

SIDEWALK TORONTO

SIDE WALK LABS

We aim to combine world-class urban design with cutting-edge technology to set new standards for sustainability, affordability, and economic opportunity for Torontonians of all incomes, abilities, and ages.

Sidewalk Toronto will create a new type of inclusive urban community that puts physical, digital, and social innovation to work for a better quality of life.

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Quality of Life for All

Community Well-Being

The physical environment is a platform for everyday life and its design plays an important role in supporting community well-being, enhancing quality of life and enabling healthy lifestyles.

Diversity, Equity & Inclusion

Inclusive communities and economic growth require a commitment to values of diversity, equity and inclusion.

Sidewalk Toronto is planning a neighbourhood where all are welcome and have an opportunity to flourish and thrive.

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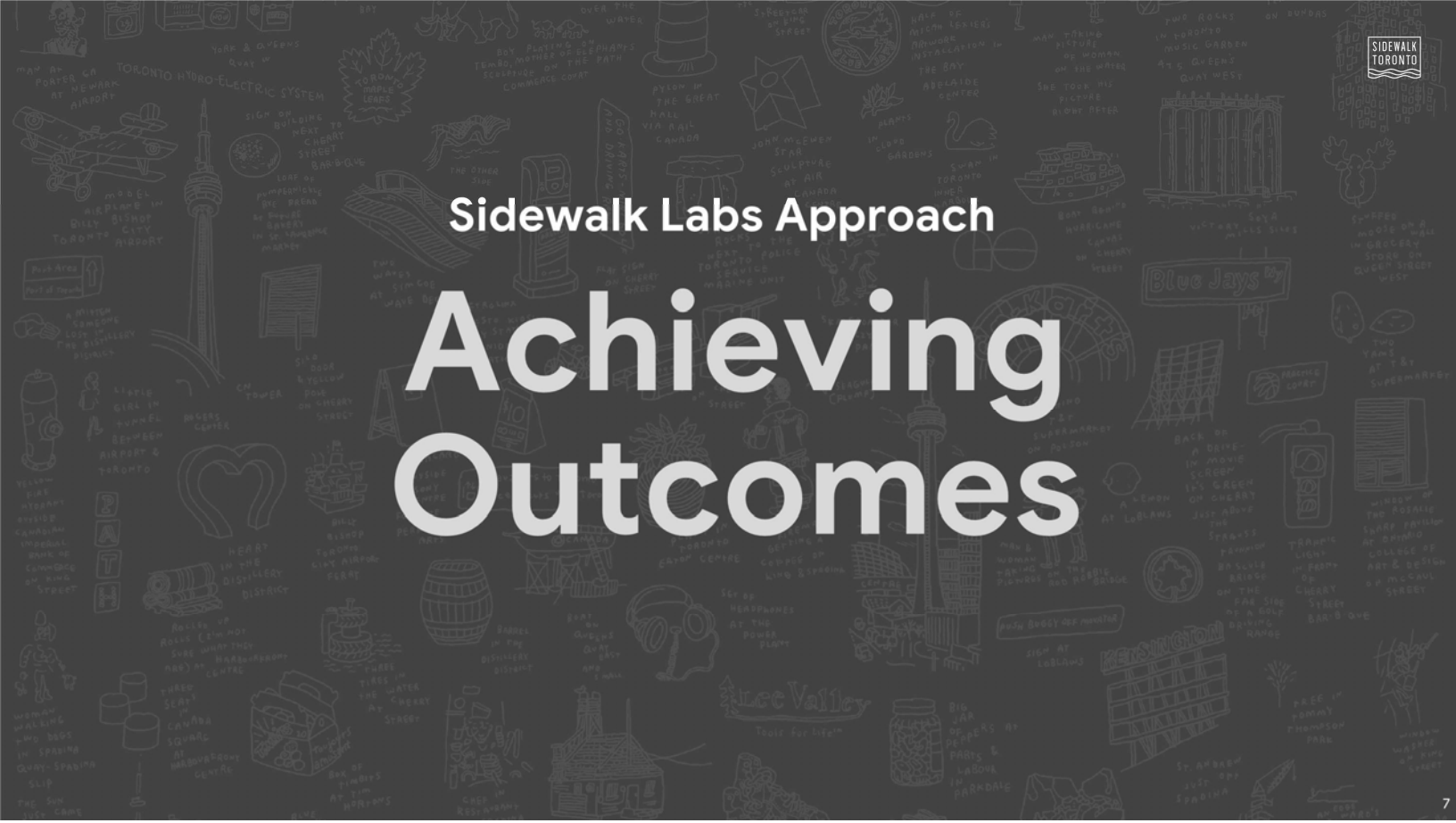
Sidewalk Labs: Role

Essential Catalyst



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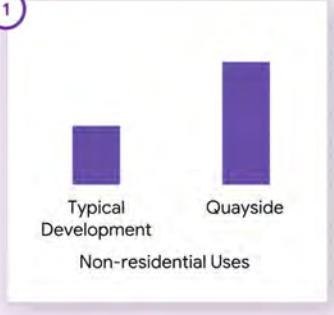
Achieving Outcomes Together

Economic Development

Growth on the Waterfront must support Toronto's need for continued economic success and growth in employment. Spaces that support this and catalysts that drive it are both needed.

More and broader non-residential uses

1



Growing new & nascent Canadian innovation-centered industries

2



Innovative Materials: Tall Timber

3



Innovative Services: Urban Innovation Cluster, Seed Space

New lower-floor typology for micro-enterprises

4



"Stoa" Ground Floor

Bringing together and growing eco-systems

5



Catalytic Uses

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Achieving Outcomes Together

A Climate Positive and Sustainable Waterfront

Investment in the technologies and infrastructure to make this happen is necessary and achievable.

Clean energy and smart energy management

1. Thermal Grid
2. Advanced Power Grid
3. Building Construction meeting Toronto Green Standards - Tier 3
4. Autonomous Buildings

Creating greener buildings with new materials and methods

5. Sustainable Construction and Materials



Getting around with fewer emissions

6. Increased transit and active transportation rides



Collecting and managing waste and water more effectively

7. Smart Waste Management



8. Active Water Management



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Achieving Outcomes Together

Affordability and Inclusive Communities

Housing affordability continues to worsen and is threatening Toronto's tradition of creating inclusive communities. We need to re-establish this priority.

Exceed affordable targets & expand housing options

1. **20% affordable and Up to 20% middle income**
2. **Significantly more purpose-built rental housing**
3. **New housing options,** including co-living, family housing, shared equity

Reduce construction costs w/ new technology & innovative design

4. Factory construction of buildings



5. Efficient Units



Design and provide services for all ages and abilities

6. Family-supportive design; options to age in place



7. Accessible Design



Dedicate spaces for community uses

8. Expanded All-Ages Public Realm
9. Community Facilities; Arts, Health, Education and Civic Engagement spaces



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Achieving Outcomes Together

New Mobility

Growth is creating challenges to traditional ways of moving around, but supporting changes in mobility offer opportunities to help people and goods move easily.

Transit-priority and transit-first

1



LRT Expansion

Streets designed to evolve with emerging technologies

2



Dynamic curb design and management

Multi-modal options that rival car ownership

3



Exceptional bike and pedestrian infrastructure

4

Mobility as a Shared Service

New last mile delivery system

5



Freight Consolidation Center

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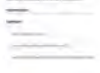
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Achieving Outcomes Together

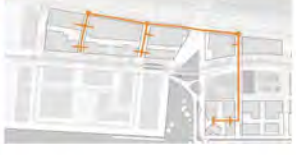
Digital Innovations

Toronto is rapidly becoming a major tech hub, and Canada's long-standing commitment to privacy and civic impact is the foundation upon which new innovation is developing.

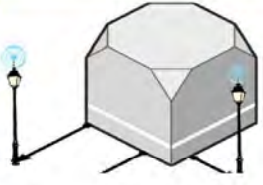
Preserving Privacy and Keeping Data Open

1. 
   Civic Data Trust- external data sharing coupled with robust privacy protection
2. 
   RDIA Process - stringent internal procedures

Ubiquitous Connectivity

3. 
   High-speed personal Wi-Fi networks

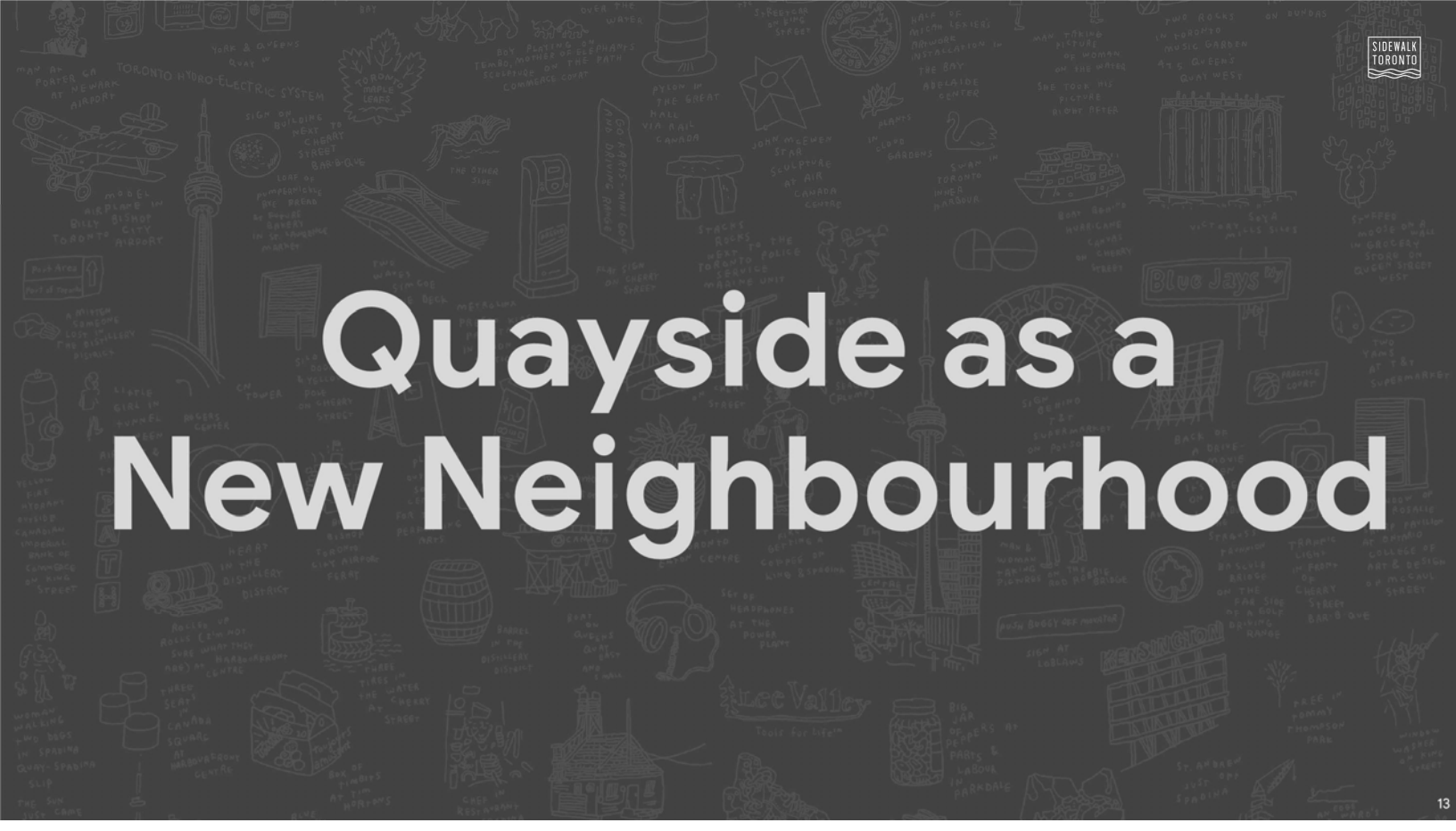
Low-Cost Digital Operations

4. 
   Widespread Digital Infrastructure

Advanced Urban Simulation

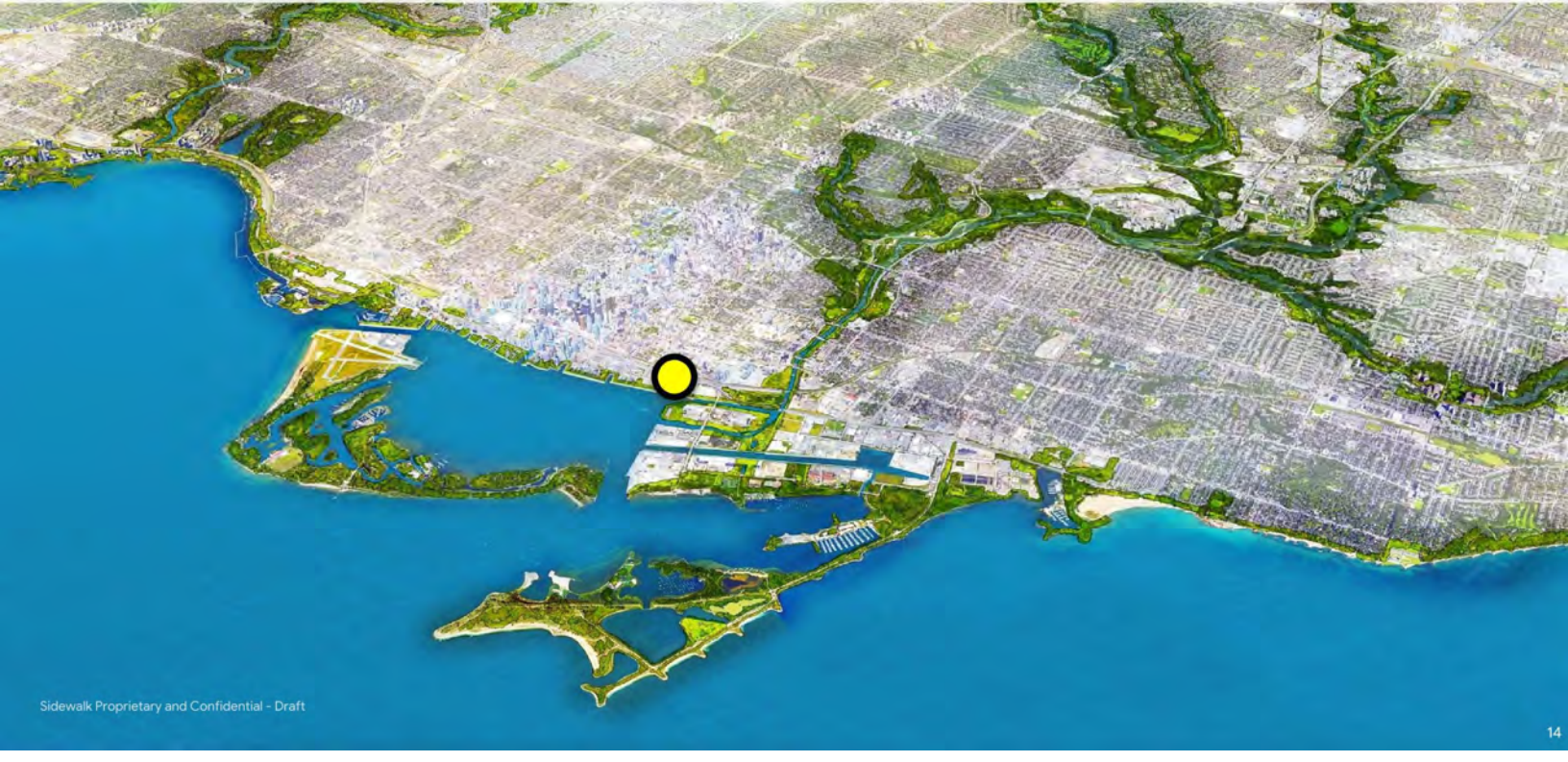
5. 
   Generative Design

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Quayside Is a Bridge between Downtown and the East



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Quayside Is a Meeting Place for Communities and Nature



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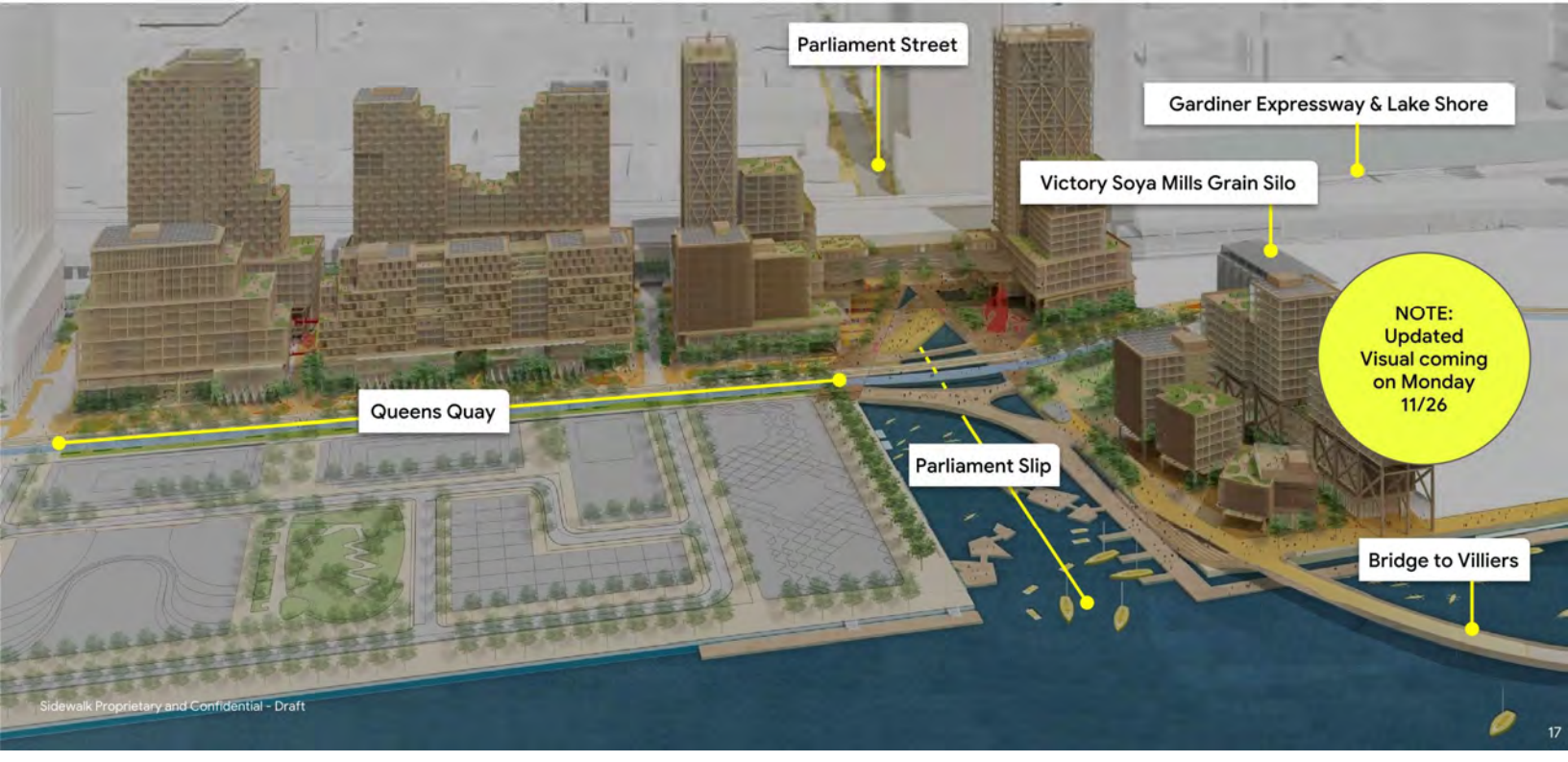
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Examples from Around the World



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Quayside Concept Plan



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Quayside Concept Plan



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Quayside Concept Plan

Proposed Program Density
2,983,000 SF



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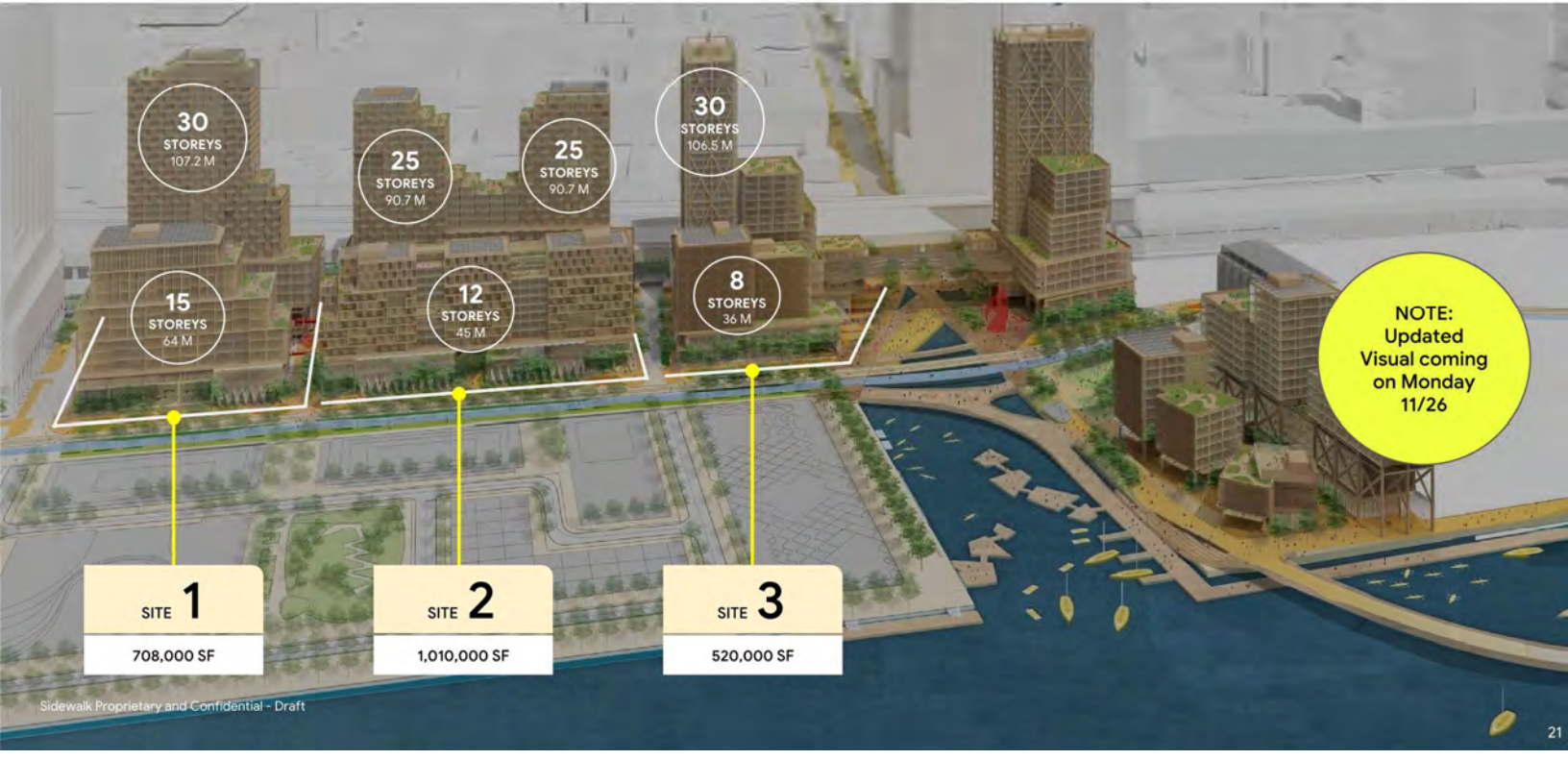


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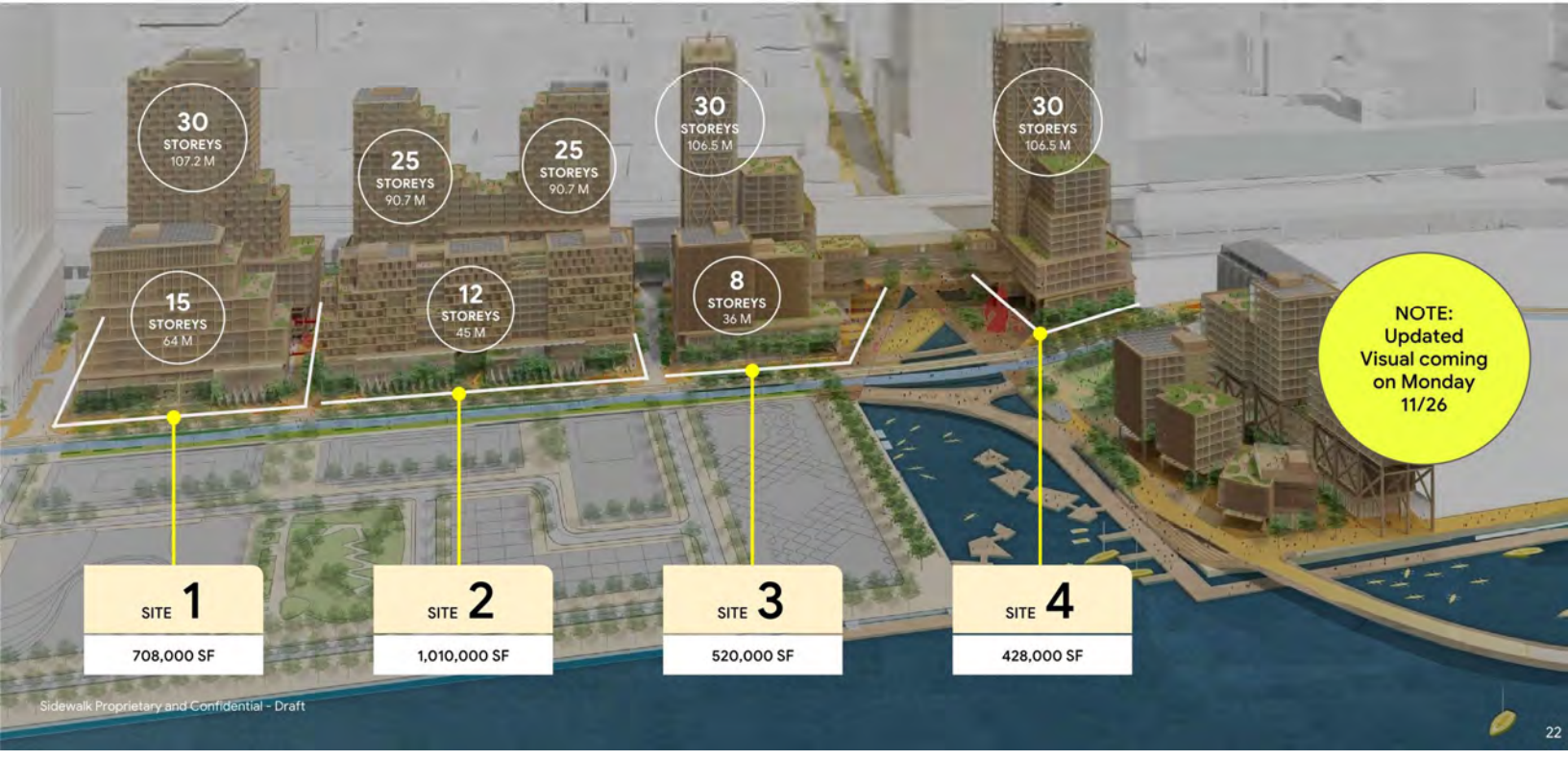


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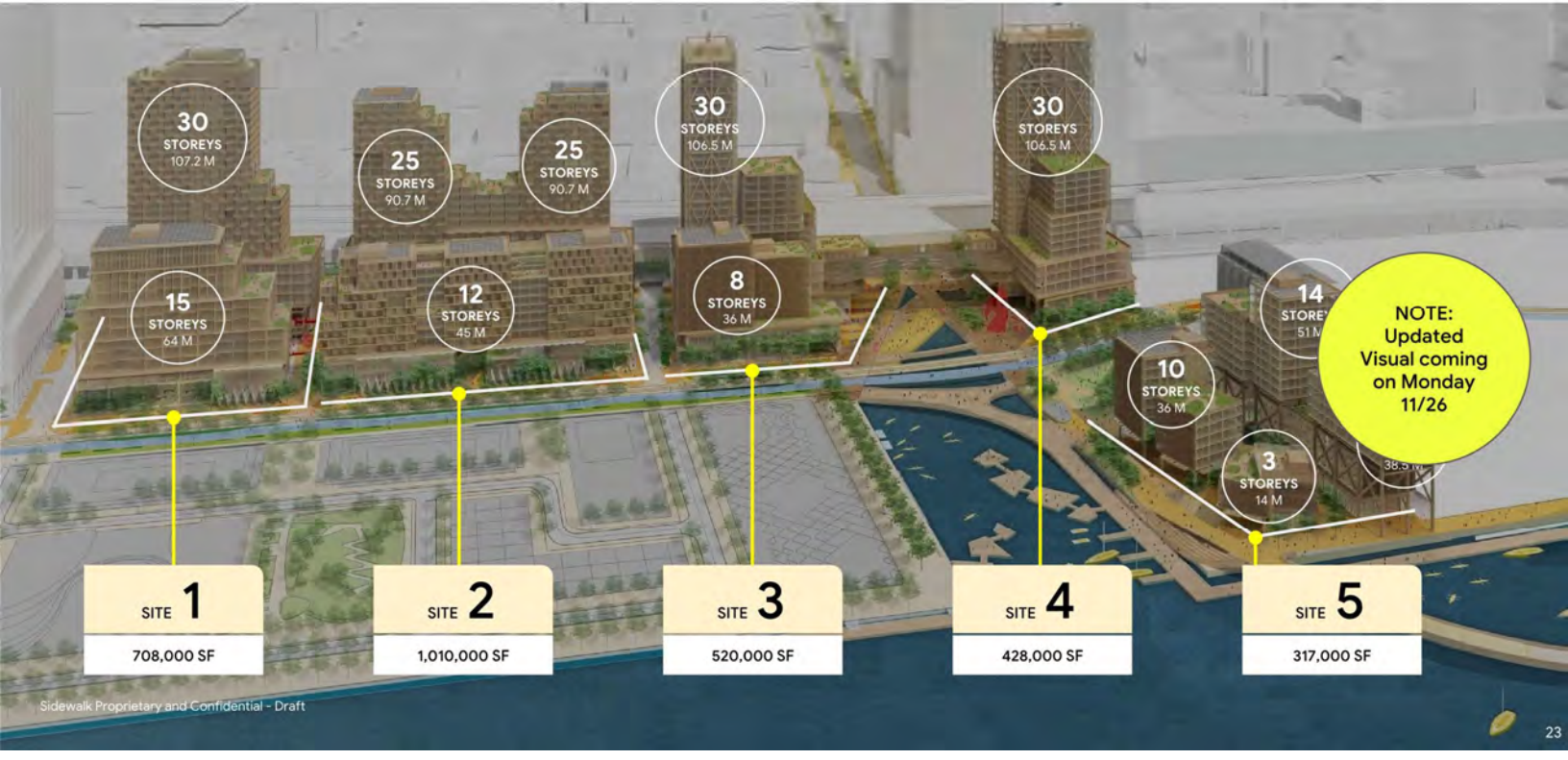


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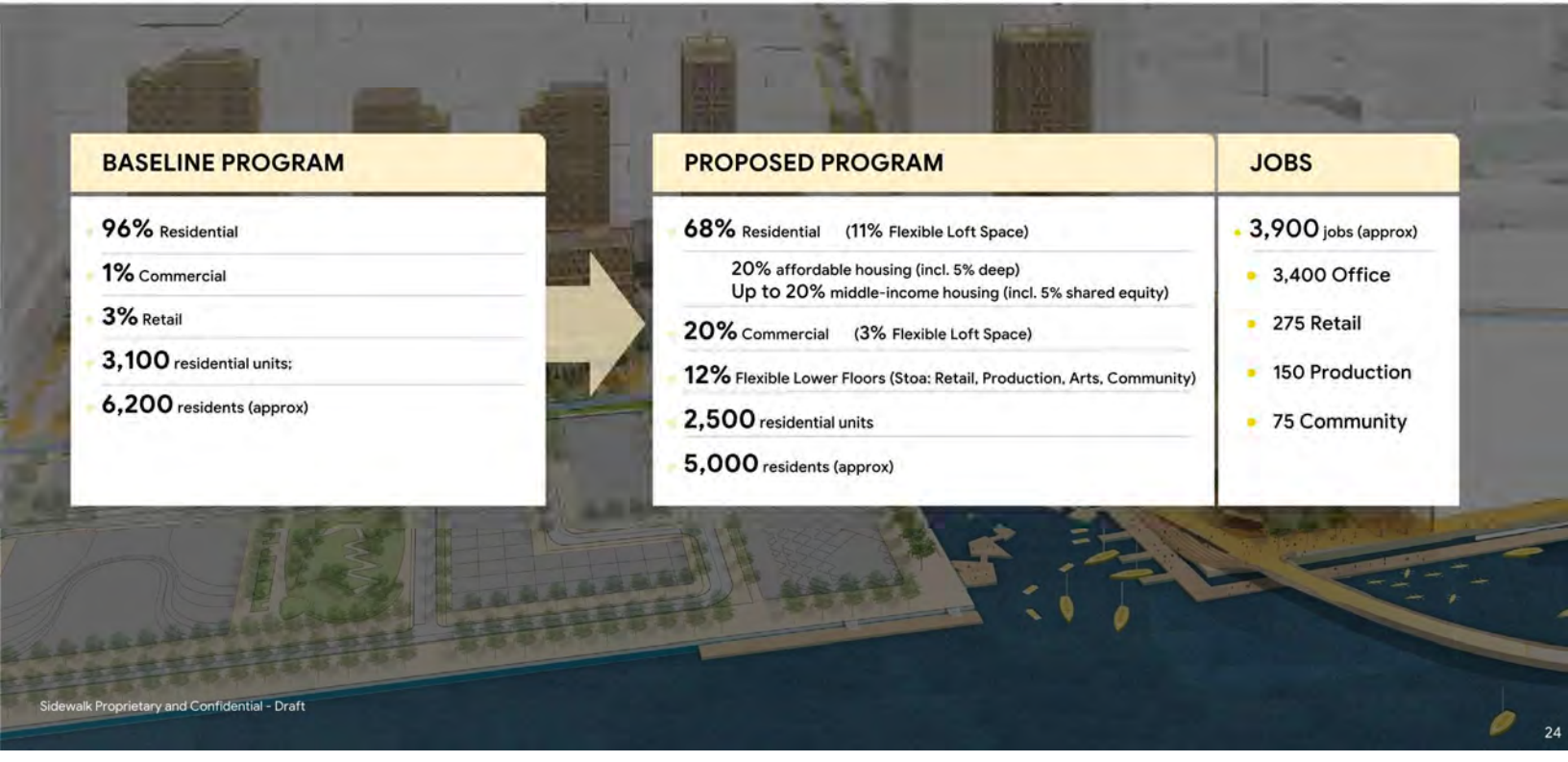


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Quayside Program

Proposed Program Density
2,983,000 SF



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Parliament Plaza

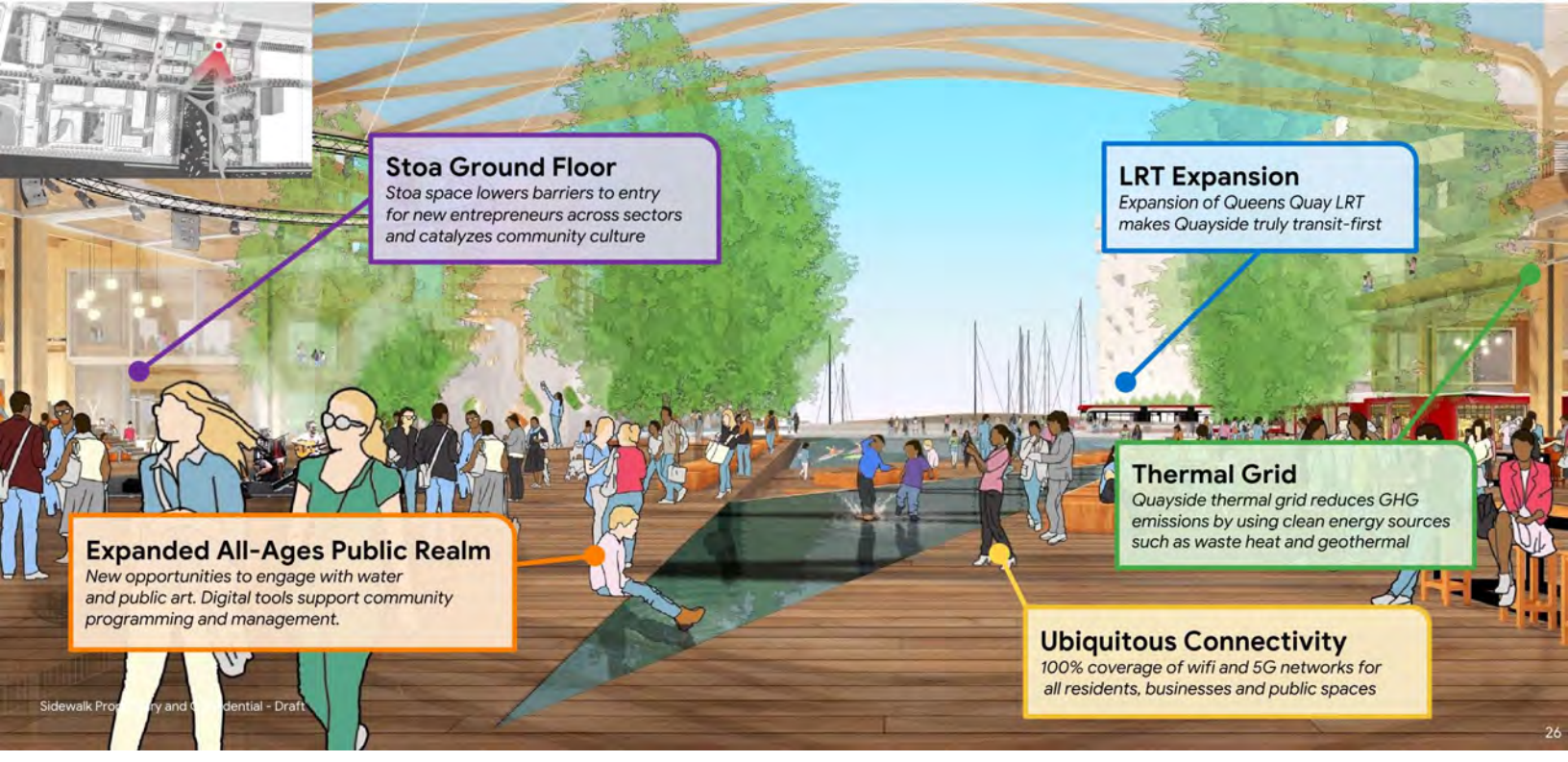
Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Parliament Plaza

Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Queens Quay

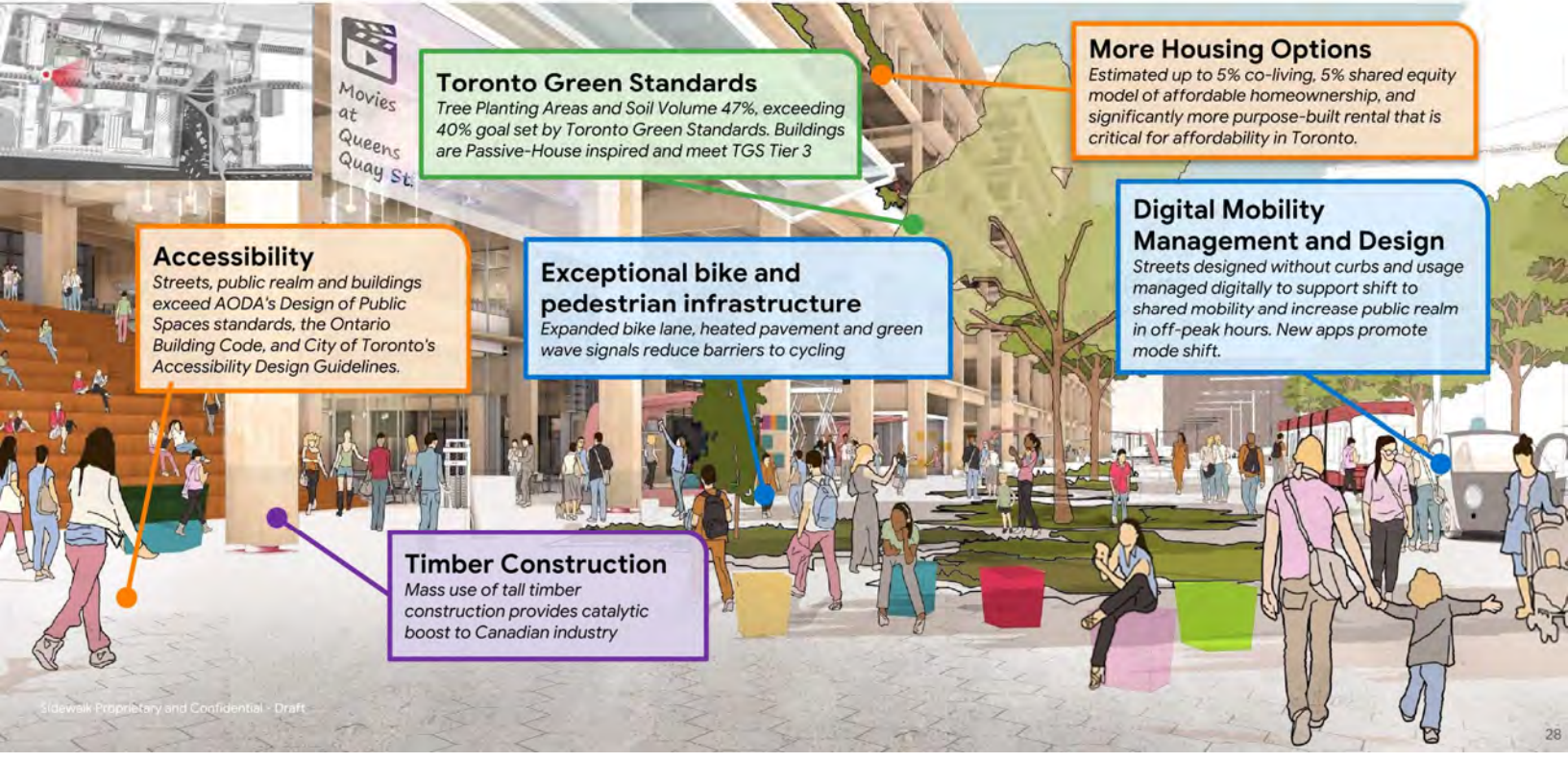
Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Queens Quay

Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Pedway btw Lake Shore & Queens Quay

Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations

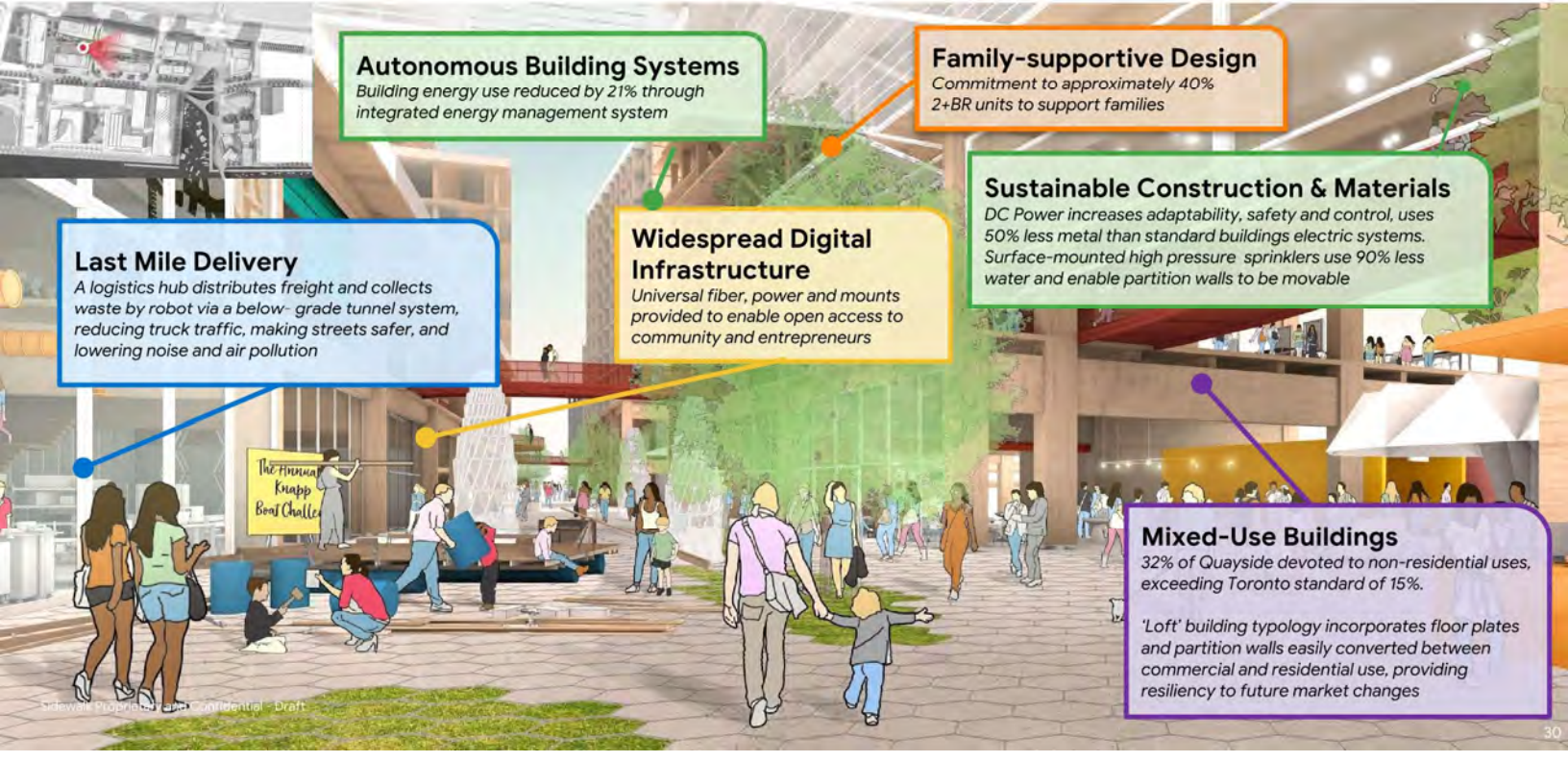


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Parliament Slip

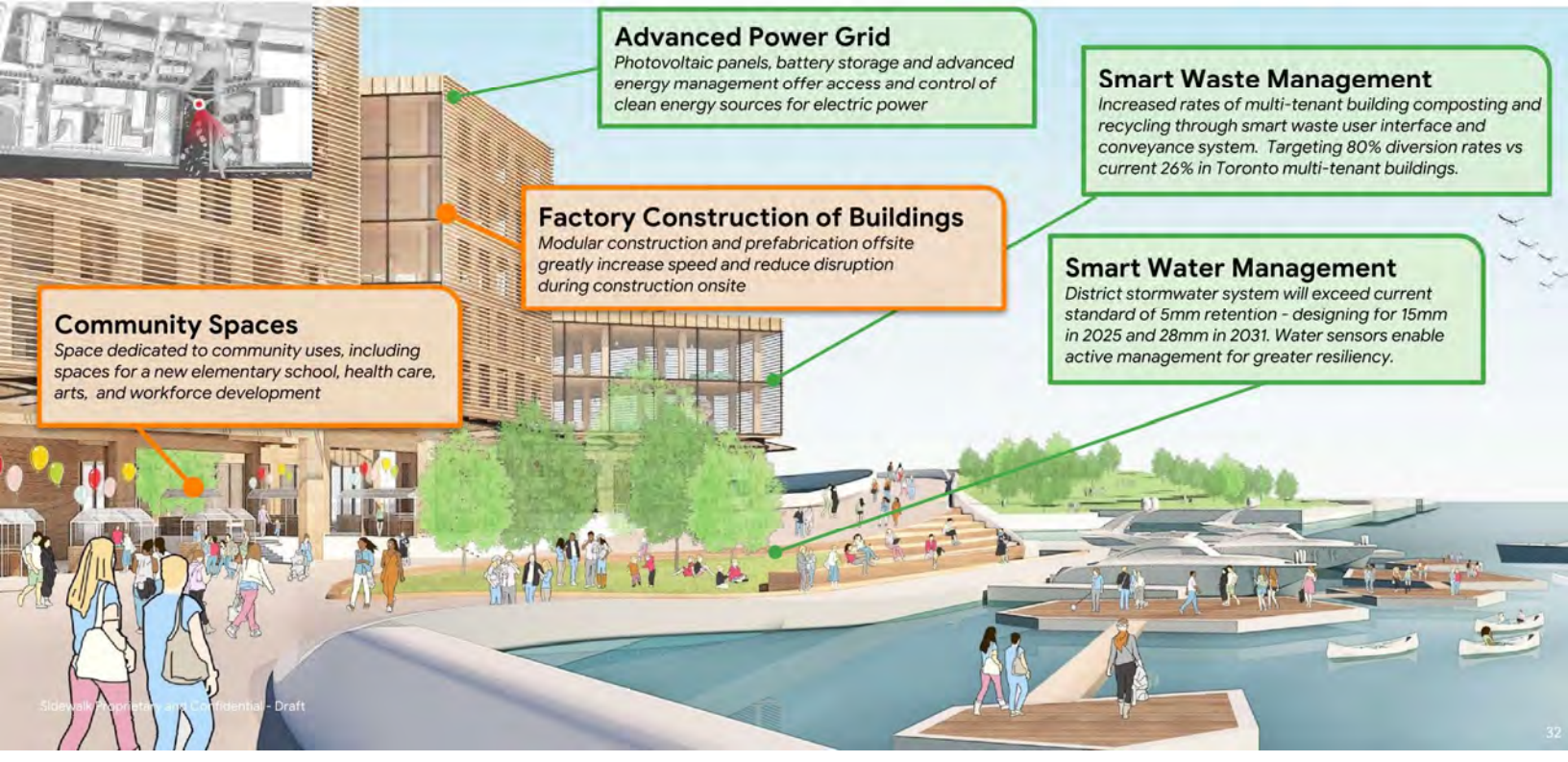
Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Parliament Slip

Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Targeted Outcomes

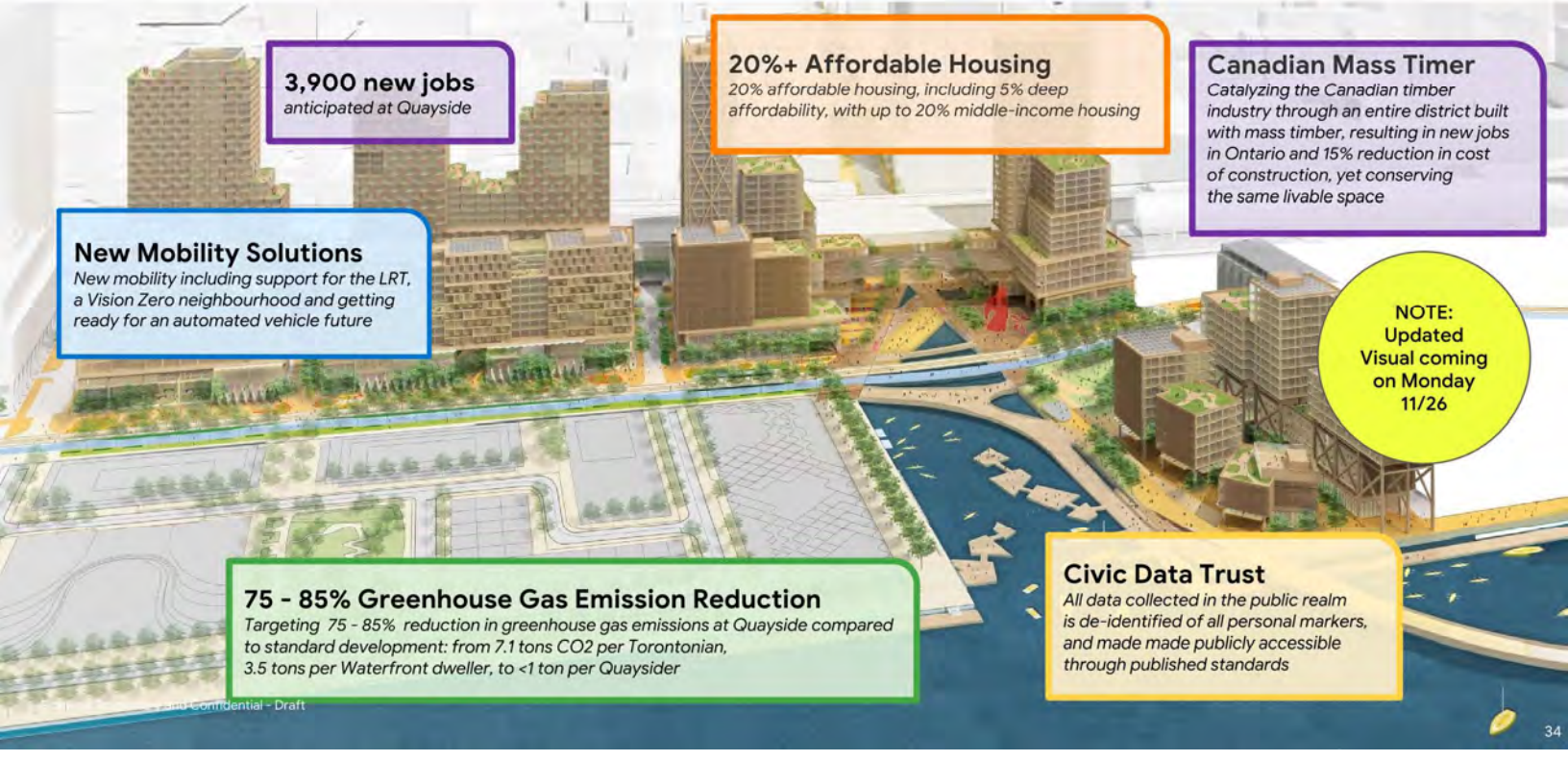
Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Targeted Outcomes

Economic Dev | Climate Positive | Affordability & Inclusivity | New Mobility | Digital Innovations



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Breakout Previews

B1 Quayside Site Plan + Transportation

B2 Affordable Housing & Social Infrastructure

B3 Sustainability

B4 Responsible Data Use

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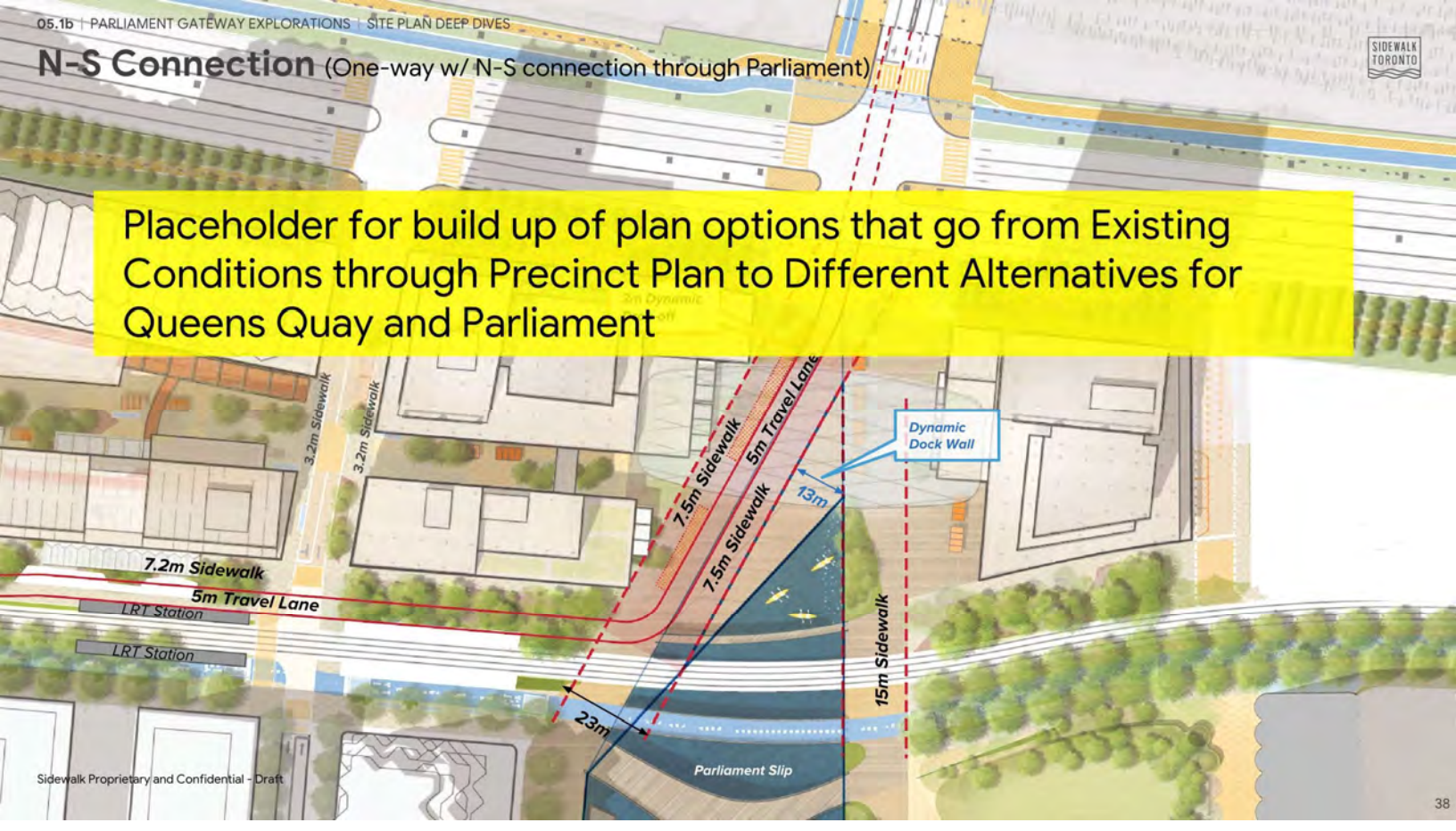
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E-W Connection (One-way through Queens Quay from Cherry to Bonnycastle)



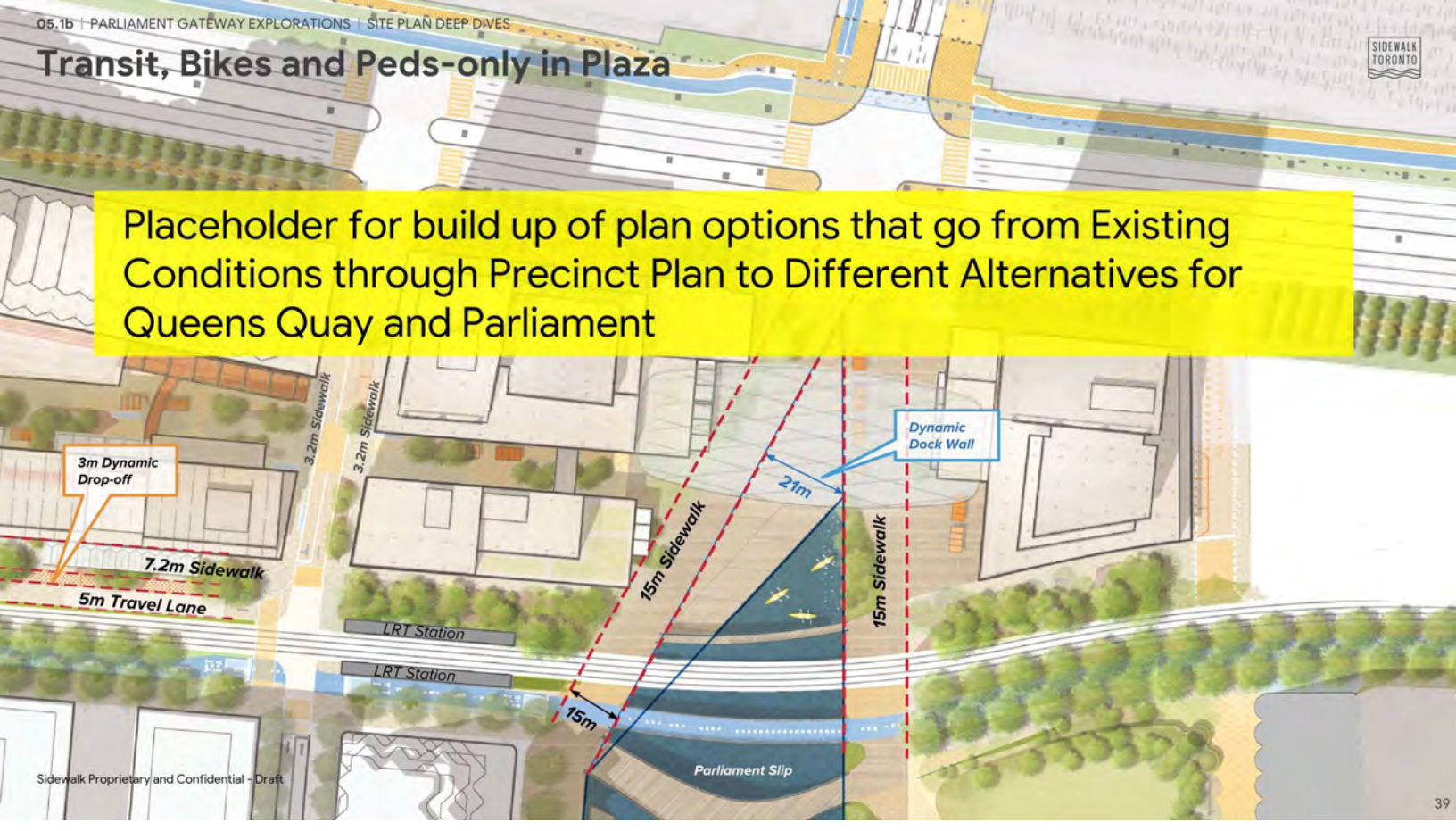
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N-S Connection (One-way w/ N-S connection through Parliament)



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Transit, Bikes and Peds-only in Plaza

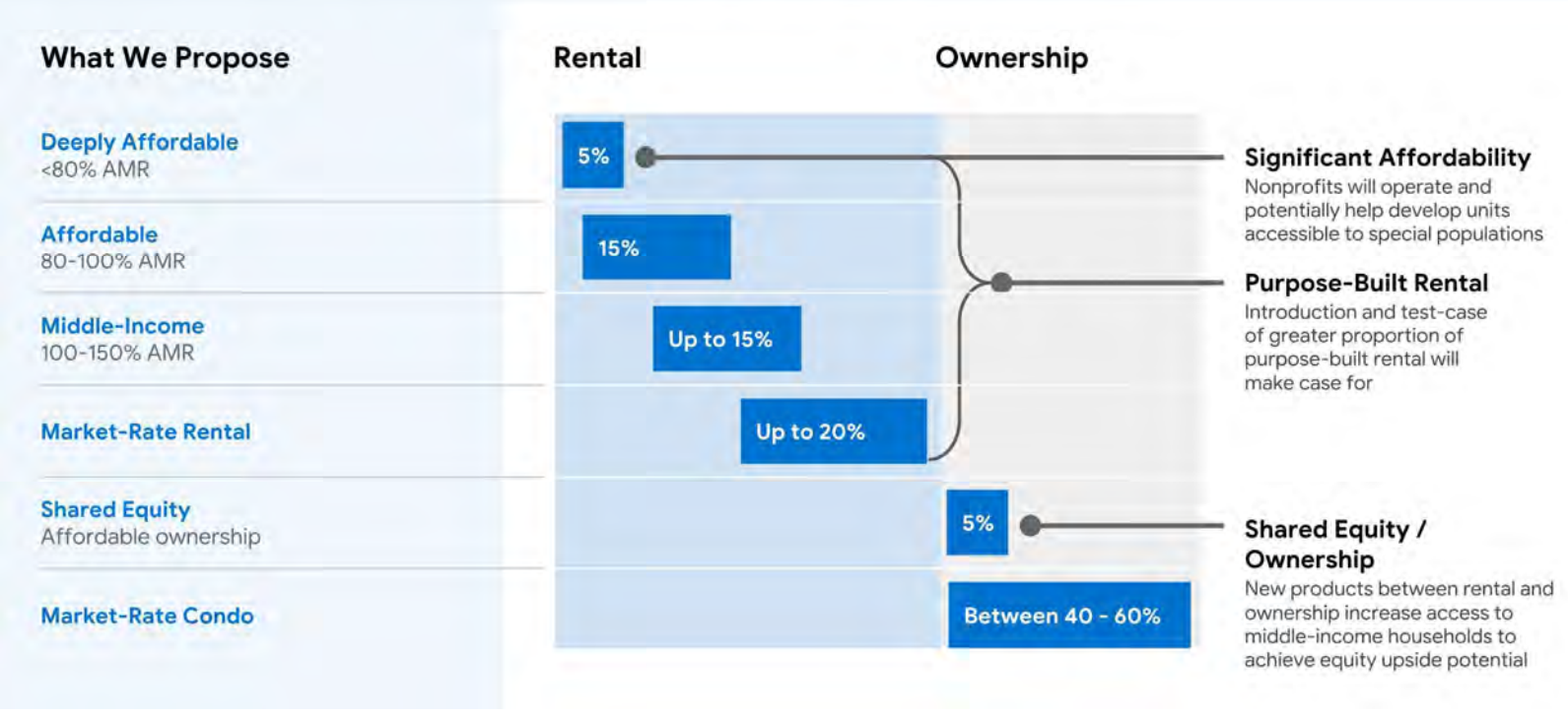


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Quayside Housing Plan [November 2018 DRAFT]

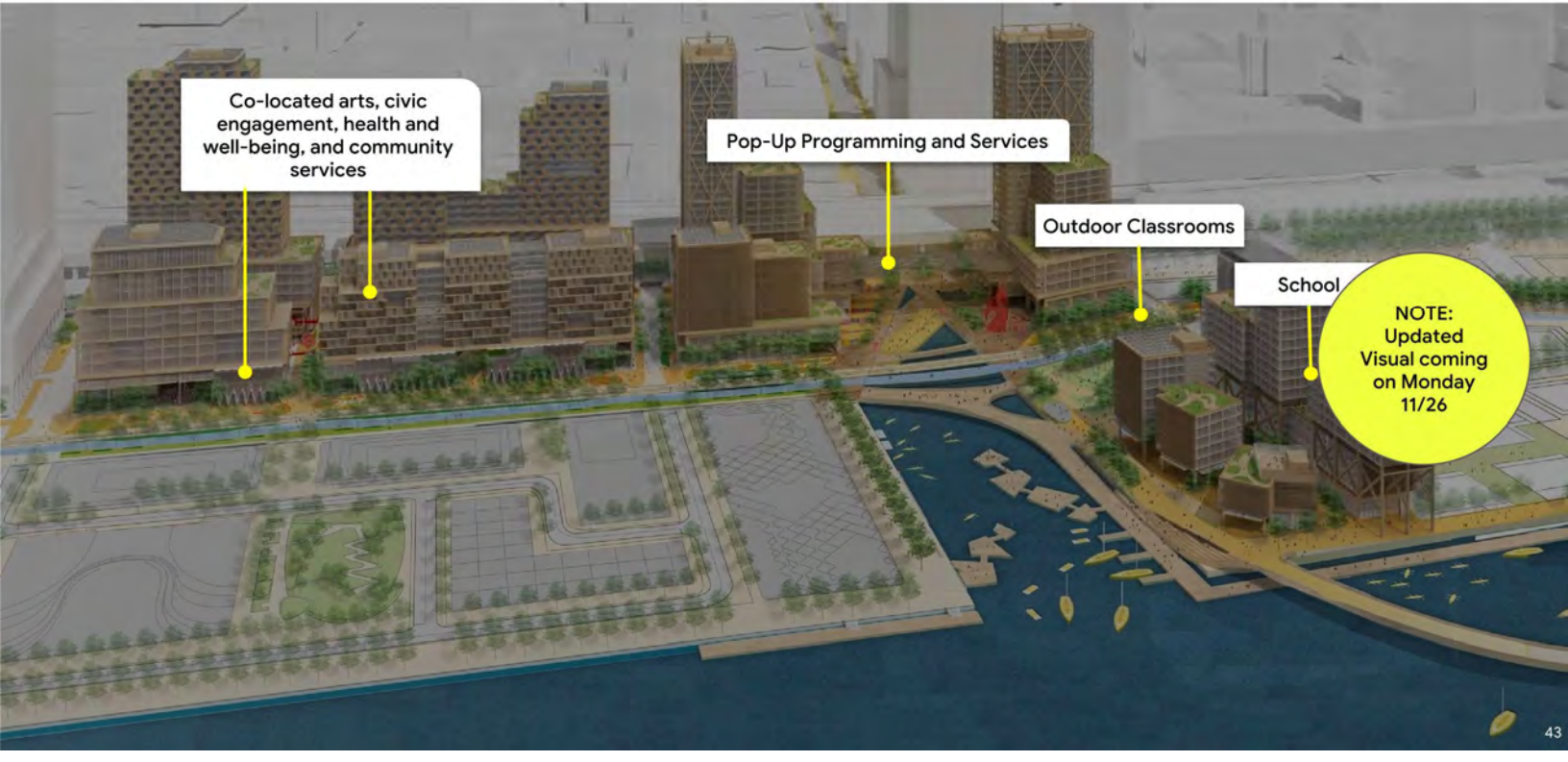


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Social Infrastructure



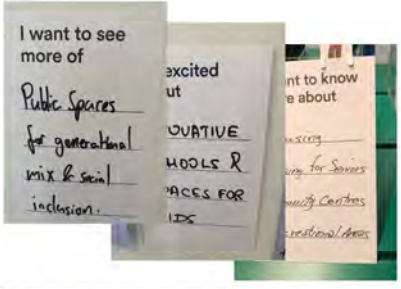
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Supporting People to Thrive in Their Everyday Lives

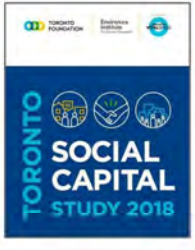
Sidewalk Toronto aspires to be a healthy urban community where all people can thrive and belong throughout their lives.

Social infrastructure is key to this vision.













Vital Signs (Toronto Foundation)

TOCore Community Services & Facilities Plan

City's Youth Engagement Strategy

City's Seniors Strategy

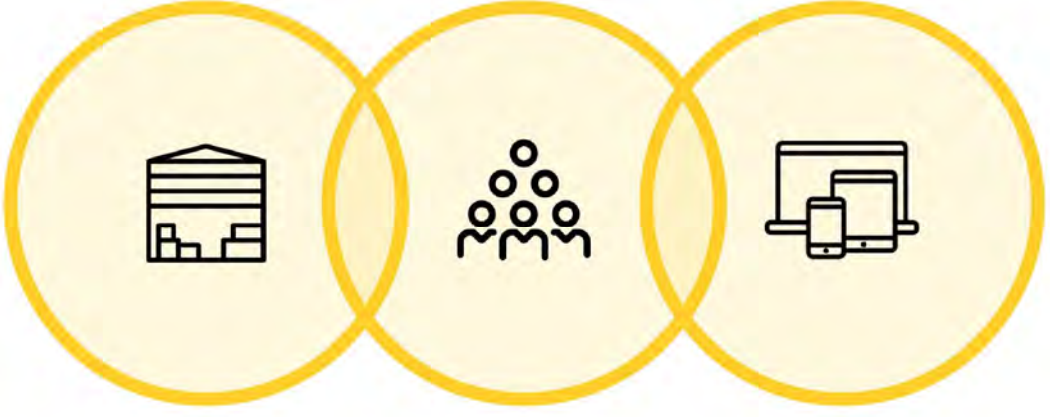
Toronto Community Feedback

Photos of feedback cards on the wall at 307

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Intentional and Proactive Social Infrastructure Planning

Social infrastructure is comprised of the the physical spaces, programming & services and digital complements that shape our interactions, organize our community, and provide the supports necessary to thrive.

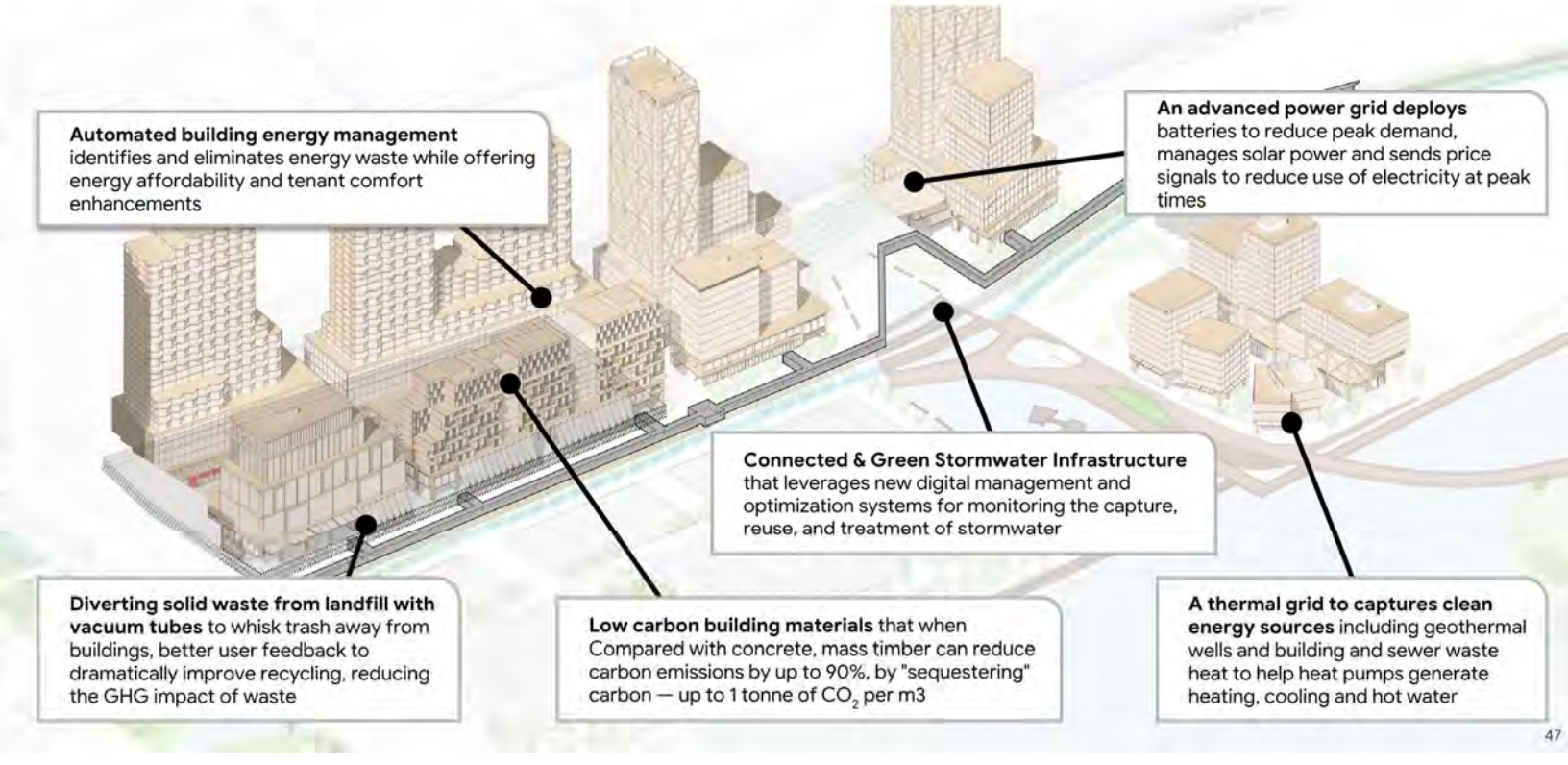


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Creating a Blueprint Climate Positive Neighbourhood



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A New Standard for Data & Privacy

The purpose for urban data collection in Sidewalk Toronto is to improve the day-to-day operation of the neighbourhood and to ultimately create a place that's more sustainable, accessible, and responsive to local needs. Four Key Components of Responsible Data Use

Civic Data Trust

An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Lab. With the Data Trust, we move away from entities, including Sidewalk Labs, solely owning and controlling these assets.

RDIA

Responsible Data Impact Assessment

Publicly auditable assessment for all public and private digital services required before data is collected and used.

Open Standards

Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation; the Data Trust might consider encouraging or requiring open standards, as well.

RDU Guidelines

Responsible Data Use Guidelines

Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation.

A New Global Standard for the Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

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Three Example Use Cases for Us to Discuss

1 Transportation

To reduce congestion, increase safety
across all modes of transportation



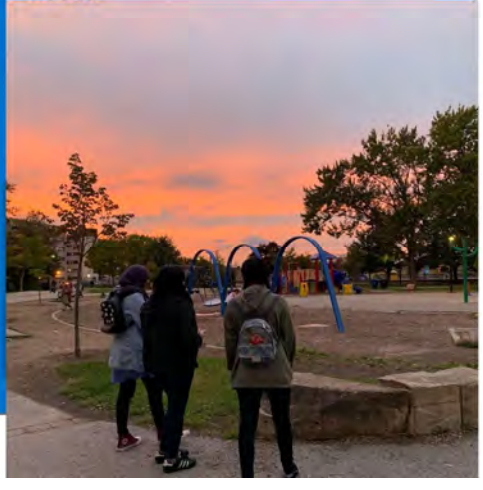
2 Building Efficiency

To achieve climate positive,
and create more comfortable living
and working spaces



3 Public Life

To create vibrant, well-managed public spaces that meet community needs



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For Immediate Release
November 28, 2018

MEDIA ADVISORY - Sidewalk Labs to reveal site plan for Quayside

WHAT: Sidewalk Labs representatives will host a briefing for media reveal – for the first time – what the site plan for Quayside will look like.

WHEN: Thursday, November 29, 2018 at 10:00AM**

WHERE: Sidewalk Toronto
307 Lakeshore Blvd. East
Toronto, ON

WHO: Briefing by Jesse Shapins, Director of Public Realm

Available for questions and interviews following briefing:
Andrew Winters, Chief Operating Officer of Development
Jesse Shapins, Director of Public Realm
Nerissa Moray, Associate Director of Planning and Development

***The briefing will be approximately 30 minutes followed by an opportunity for questions. Both the briefing and questions are on background only and not for attribution.*

Representatives will be available for on-the-record, one-on-one interviews following the briefing.

The content is embargoed until 3:00PM.

- 30 -

For media inquiries:
Keerthana Rang
Communications Associate
keerthana@sidewalklabs.com
647-998-2615

SIDEWALK TORONTO

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Sidewalk Toronto Roundtable #4 Agenda

Saturday, December 8, 2018 | Metro Toronto Convention Centre

Morning Session Overview				
Saturday, 8 December, 2018 || 9:00am - 12:30pm				
9:00 a.m. - 9:30 a.m.	Registration & Information Stations Location: MTCC South Building, Level 7 Foyer (west end) Talk to Waterfront Toronto and Sidewalk Labs staff about the Sidewalk Toronto project. Leave your comments on one of our feedback boards or chat with one of our facilitators.			
9:30 a.m. - 10:30 a.m.	Plenary Presentation and Q&A Location: 701 A/B Hear from Waterfront Toronto about the project objectives and the criteria against which the proposed Quayside Master Innovation and Development Plan will be assessed. Sidewalk Labs staff will then walk you through concept site plans for Quayside highlighting the innovation that makes this neighbourhood unique. A short question and answer session will follow. Then, you will have the chance to take a deeper dive into the topic of your choice during breakout discussion sessions. *Light refreshments will be provided, including coffee, tea, water and cookies. Gluten free and vegan options will be available.*			
10:30 a.m - 10:40 a.m.	Move to Breakout Rooms - Rotation 1			
	Breakout #1	Breakout #2	Breakout #3	Breakout #4
10:40 a.m. - 11:30 a.m.	**Quayside Site Plan & Transportation** Location: 701 A/B	**Affordable Housing & Social Infrastructure** Location: 703	**Digital Governance** Location: 705	**Sustainability** Location: 707
11:30 a.m. - 11:40 a.m.	Move to Breakout Rooms - Rotation 2			
	Breakout #1	Breakout #2	Breakout #3	Breakout #4
11:40 a.m. - 12:30 a.m.	**Quayside Site Plan & Transportation** Location: 701 A/B Note: this is a repeat session	**Affordable Housing & Social Infrastructure** Location: 703 Note: this is a repeat session	**Digital Governance** Location: 705 Note: this is a repeat session	**Sustainability** Location: 707 Note: this is a repeat session
12:30 p.m.	Roundtable concludes			

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Afternoon Session Overview Note: This is a repeat of the morning session				
Saturday, 8 December, 2018 || 1:30pm - 5:00pm				
1:30 p.m. - 2:00 p.m.	Registration & Information Stations Location: MTCC South Building, Level 7 Foyer (west end) Talk to Waterfront Toronto and Sidewalk Labs staff about the Sidewalk Toronto project. Leave your comments on one of our feedback boards or chat with one of our facilitators.			
2:00 p.m. - 3:00 p.m.	Plenary Presentation and Q&A Location: 701 A/B Hear from Waterfront Toronto about the project objectives and the criteria against which the proposed Quayside Master innovation and Development Plan will be assessed. Sidewalk Labs staff will then walk you through concept site plans for Quayside highlighting the innovation that makes this neighbourhood unique. A short question and answer session will follow. Then, you will have the chance to take a deeper dive into the topic of your choice during breakout discussion sessions. *Light refreshments will be provided, including coffee, tea, water and cookies. Gluten free and vegan options will be available.*			
3:00 p.m. - 3:10 p.m.	Move to Breakout Rooms - Rotation 1			
	Breakout #1	Breakout #2	Breakout #3	Breakout #4
3:10 p.m. - 4:00 p.m.	**Quayside Site Plan & Transportation** Location: 701 A/B	**Affordable Housing & Social Infrastructure** Location: 703	**Digital Governance** Location: 705	**Sustainability** Location: 707
4:00 p.m. - 4:10 p.m.	Move to Breakout Rooms - Rotation 2			
	Breakout #1	Breakout #2	Breakout #3	Breakout #4
4:10 p.m. - 5:00 p.m.	**Quayside Site Plan & Transportation** Location: 701 A/B Note: this is a repeat session	**Affordable Housing & Social Infrastructure** Location: 703 Note: this is a repeat session	**Digital Governance** Location: 705 Note: this is a repeat session	**Sustainability** Location: 707 Note: this is a repeat session
5:00 p.m.	Roundtable concludes			

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SIDEWALK TORONTO

Quayside Site Plan

NOVEMBER 29, 2018

WATERFRONTToronto

SIDEWALK LABS

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Sidewalk Labs – Who We Are

Sidewalk Labs

We aim to combine world-class urban design with cutting-edge technology to set new standards for sustainability, affordability, and economic opportunity for Torontonians of all incomes, abilities, and ages.

Sidewalk Toronto

will create a new type of inclusive urban community that puts physical, digital, and social innovation to work for a better quality of life.

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November 2018 – Where We Are in the Public Engagement Process

SIDEWALK TORONTO

Roundtable 01

Approach to Innovation

March 20, 2018

Roundtable 02

Responsible Data Use, Streets, and Housing Affordability

May 3, 2018

Roundtable 03

The Building Blocks of Quayside

Aug. 14 & 15, 2018

Roundtable 04

Draft Site Plan, Housing Affordability, Social Infrastructure, Transportation, Sustainability, and Digital Governance

Dec. 8, 2018

Roundtable 05

Agenda TBD

Early 2019

City / Government Public Review & Consultation

MIDP Spring 2019

Master Innovation and Development Plan

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Waterfront Toronto's Evaluation Framework for the MIDP

WATERFRONTToronto

WATERFRONT TORONTO KEY OBJECTIVES

Priority Outcomes and "Must Do's" for the MIDP

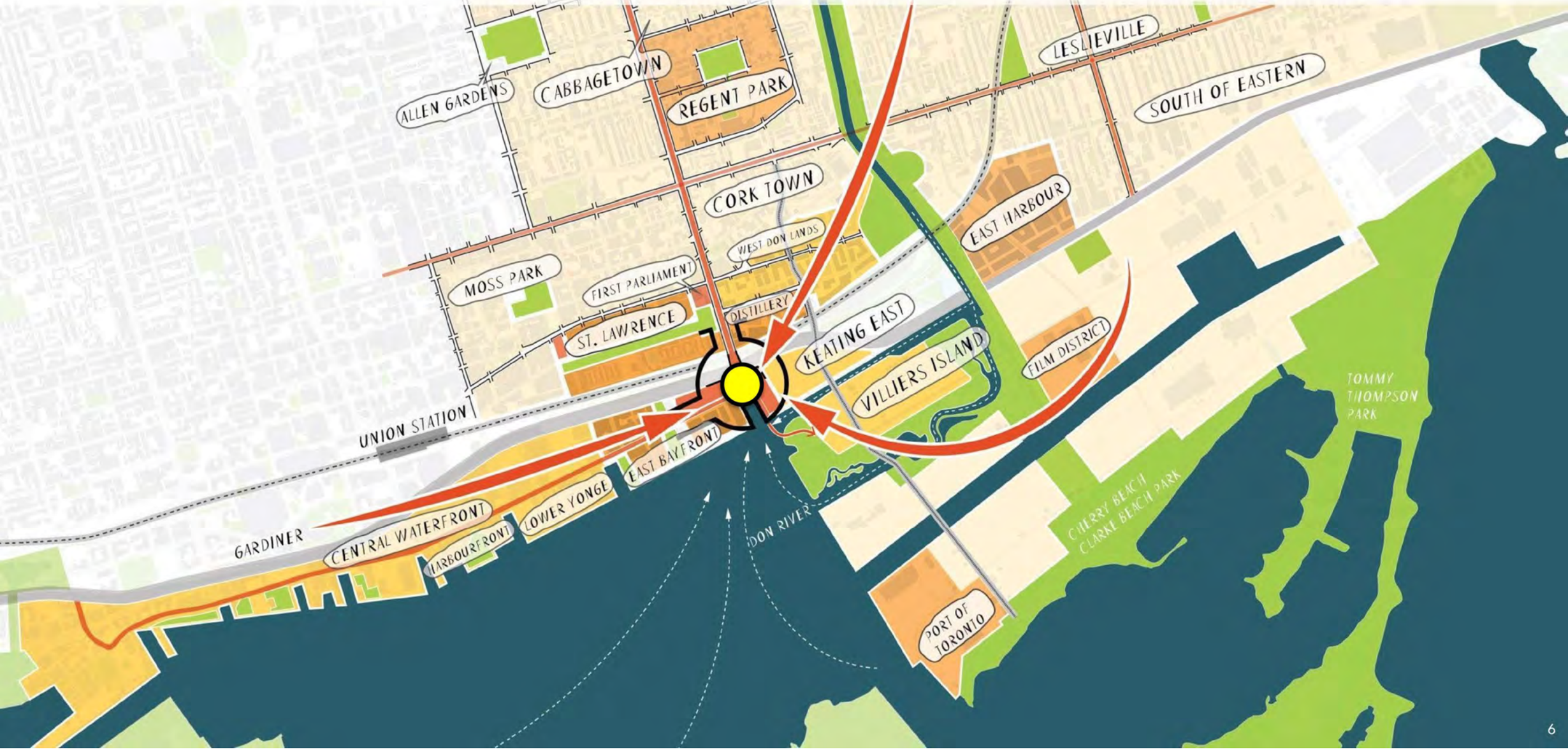
- Job Creation
- Climate Positive
- Affordable Housing
- New Mobility
- Data Privacy & Digital Governance

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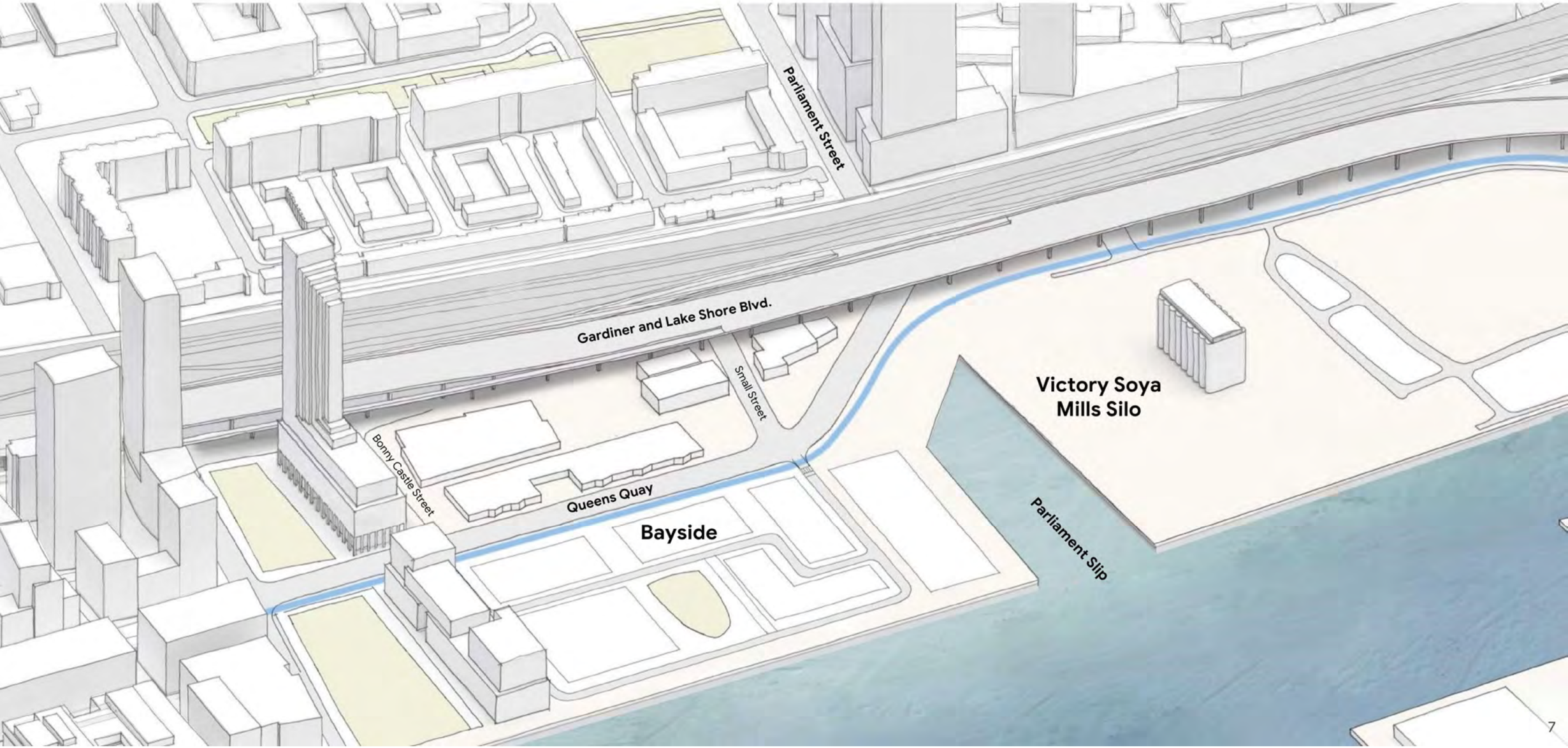
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Quayside among Toronto's Downtown and East Neighbourhoods



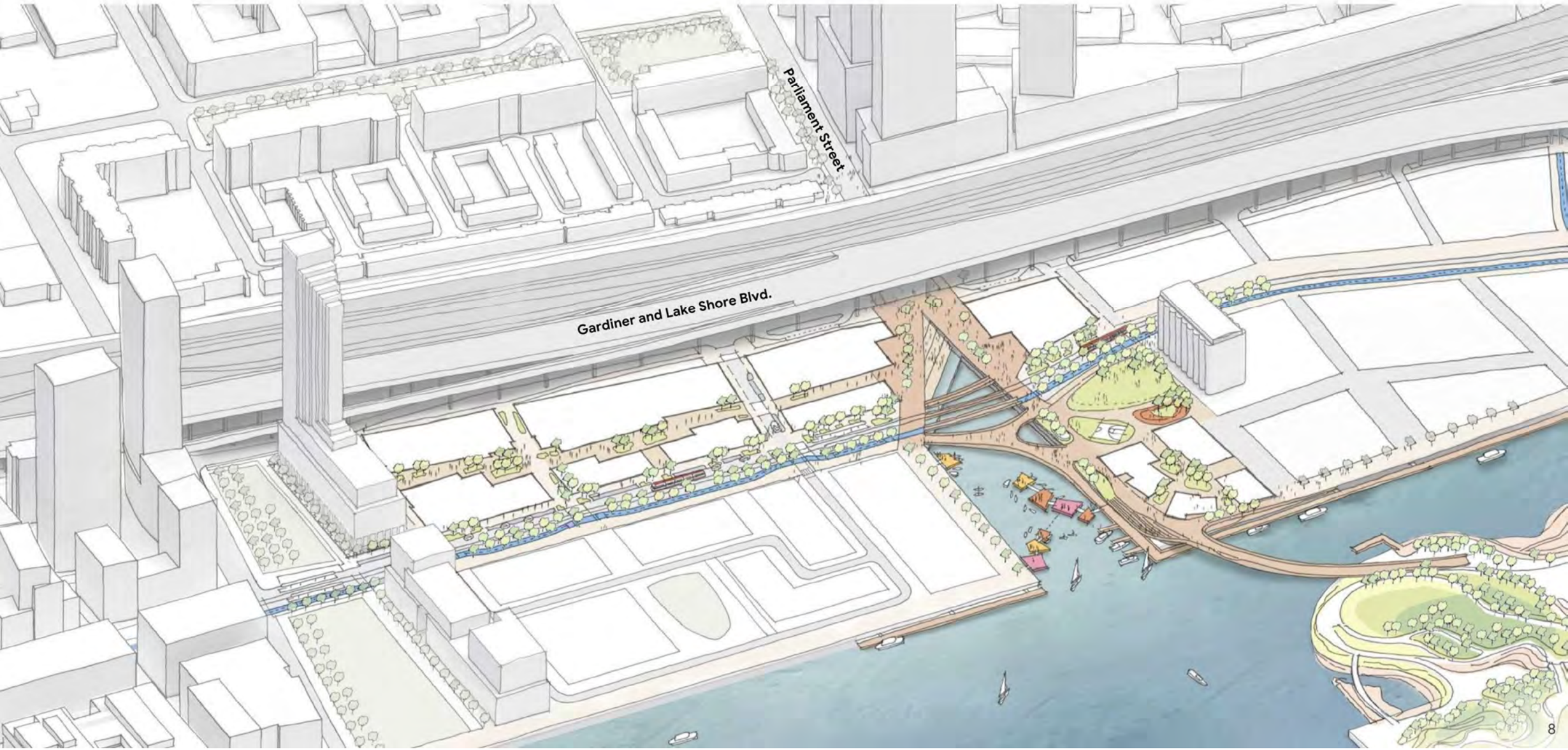
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Quayside – Today



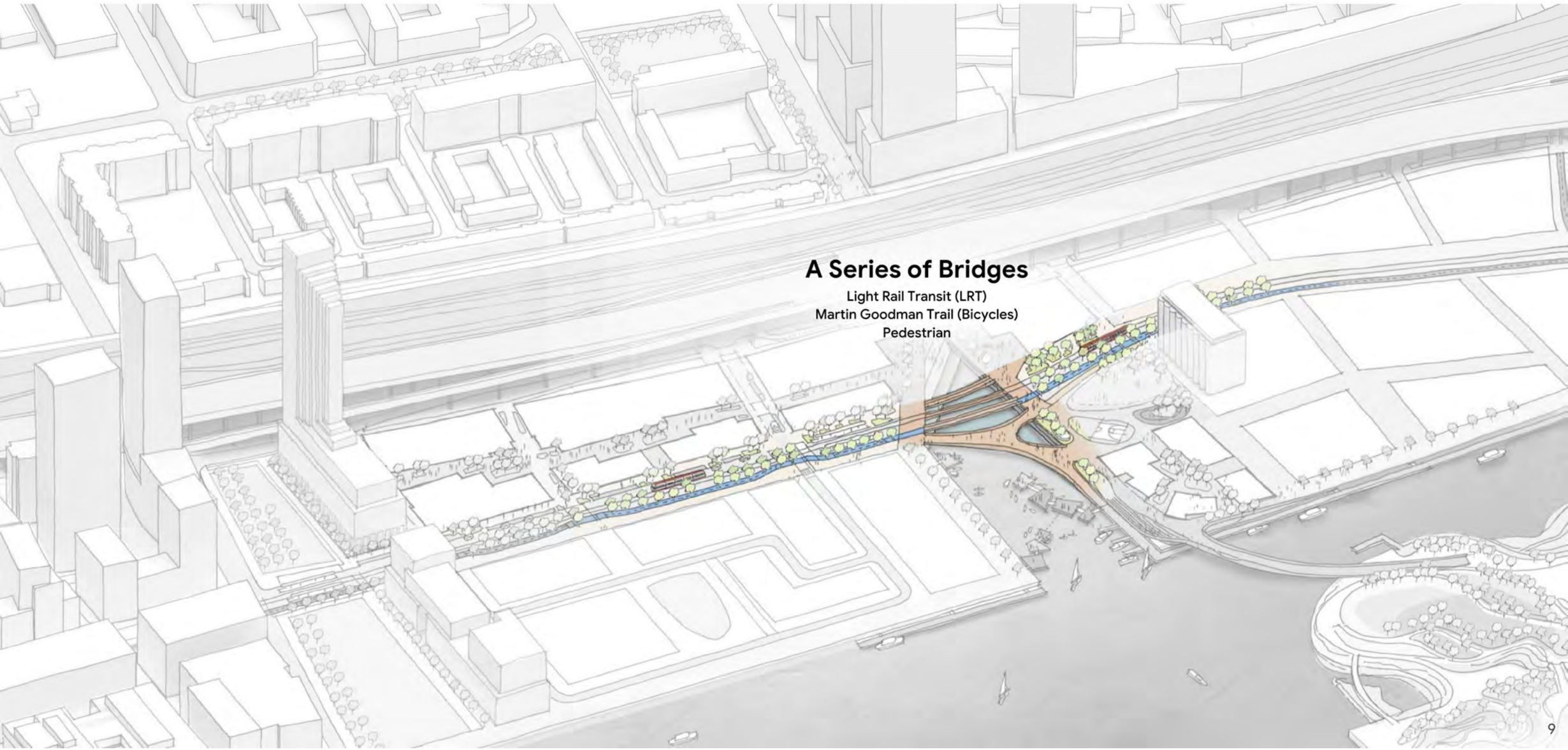
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Quayside – People-first Streets and Public Realm



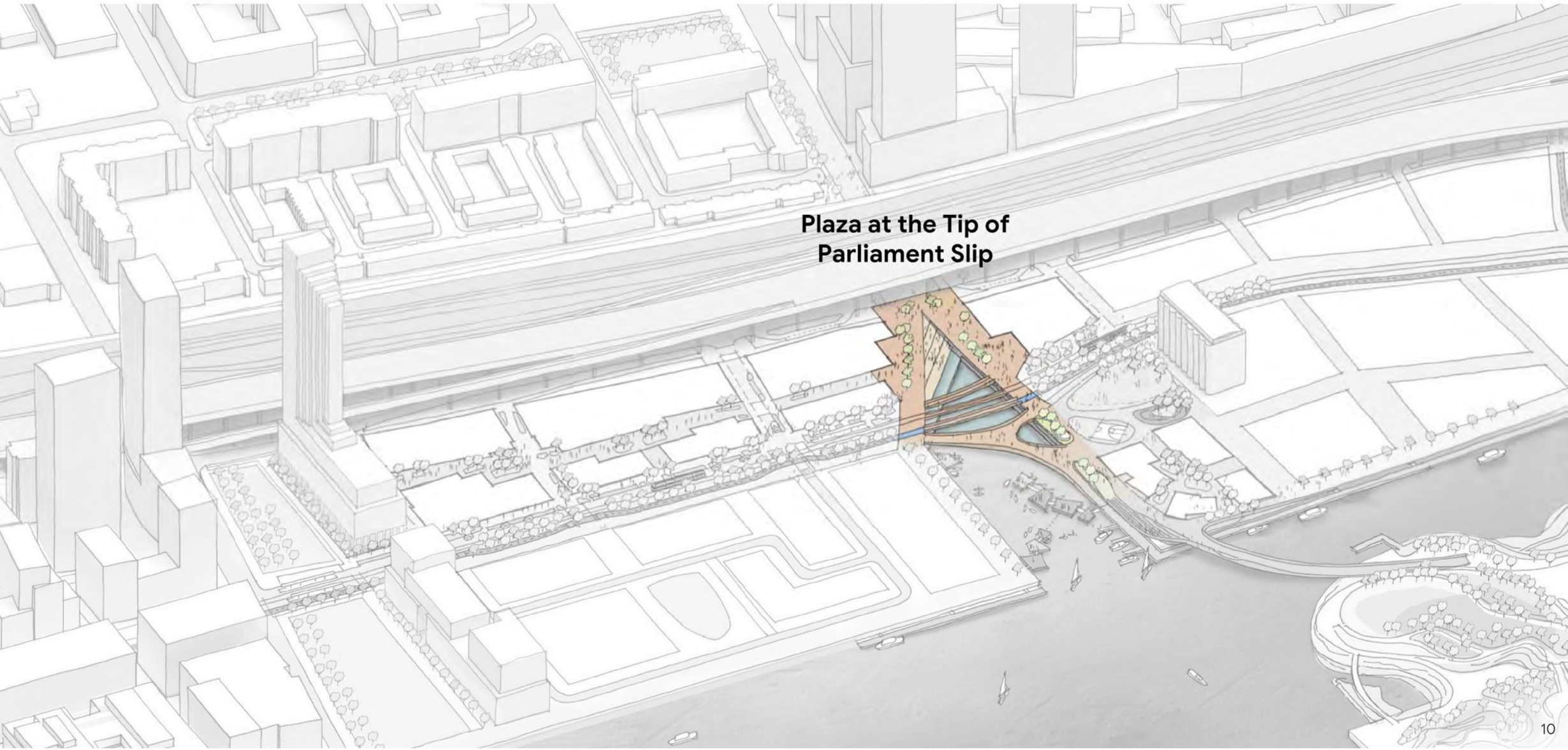
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Quayside – People-first Streets and Public Realm



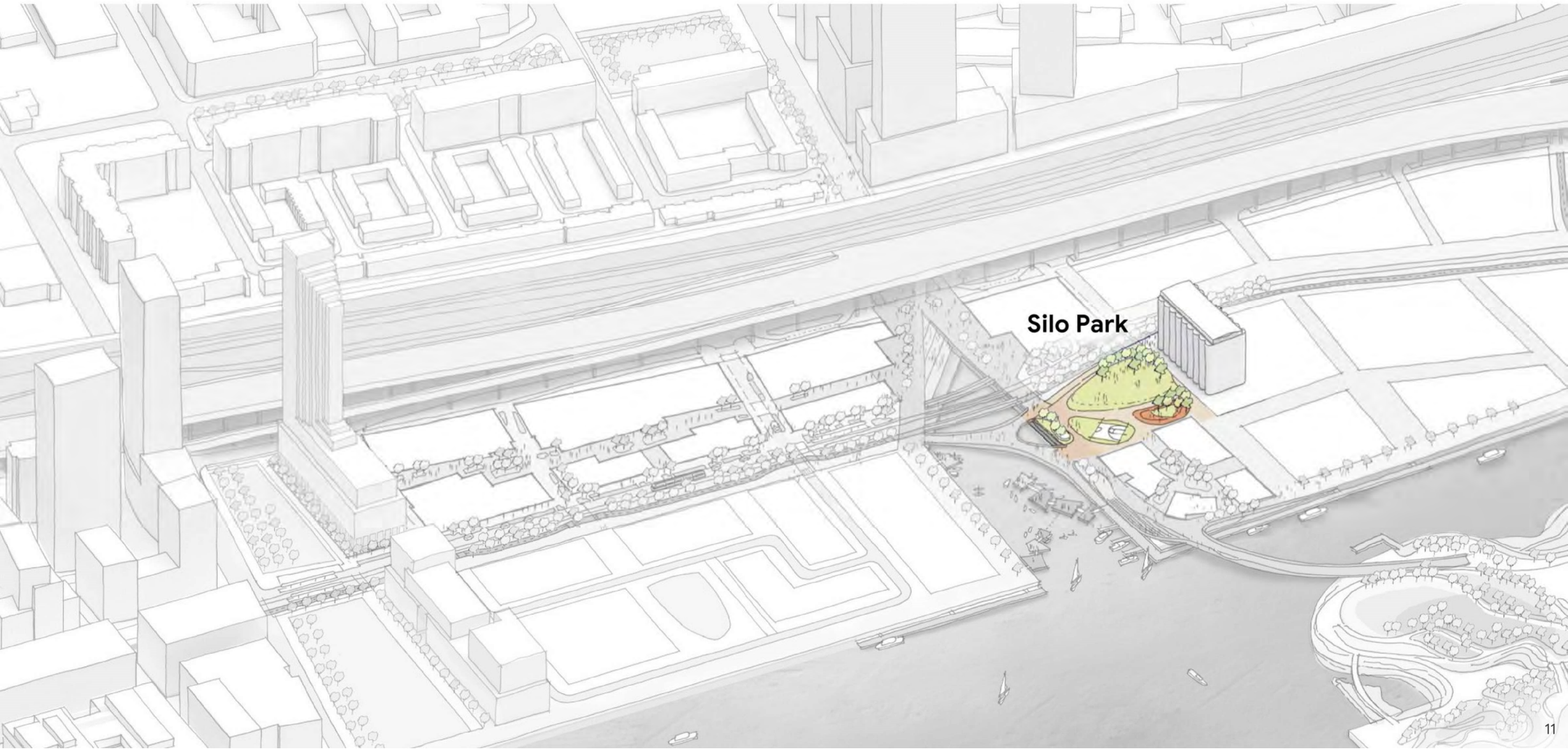
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Quayside – People-first Streets and Public Realm



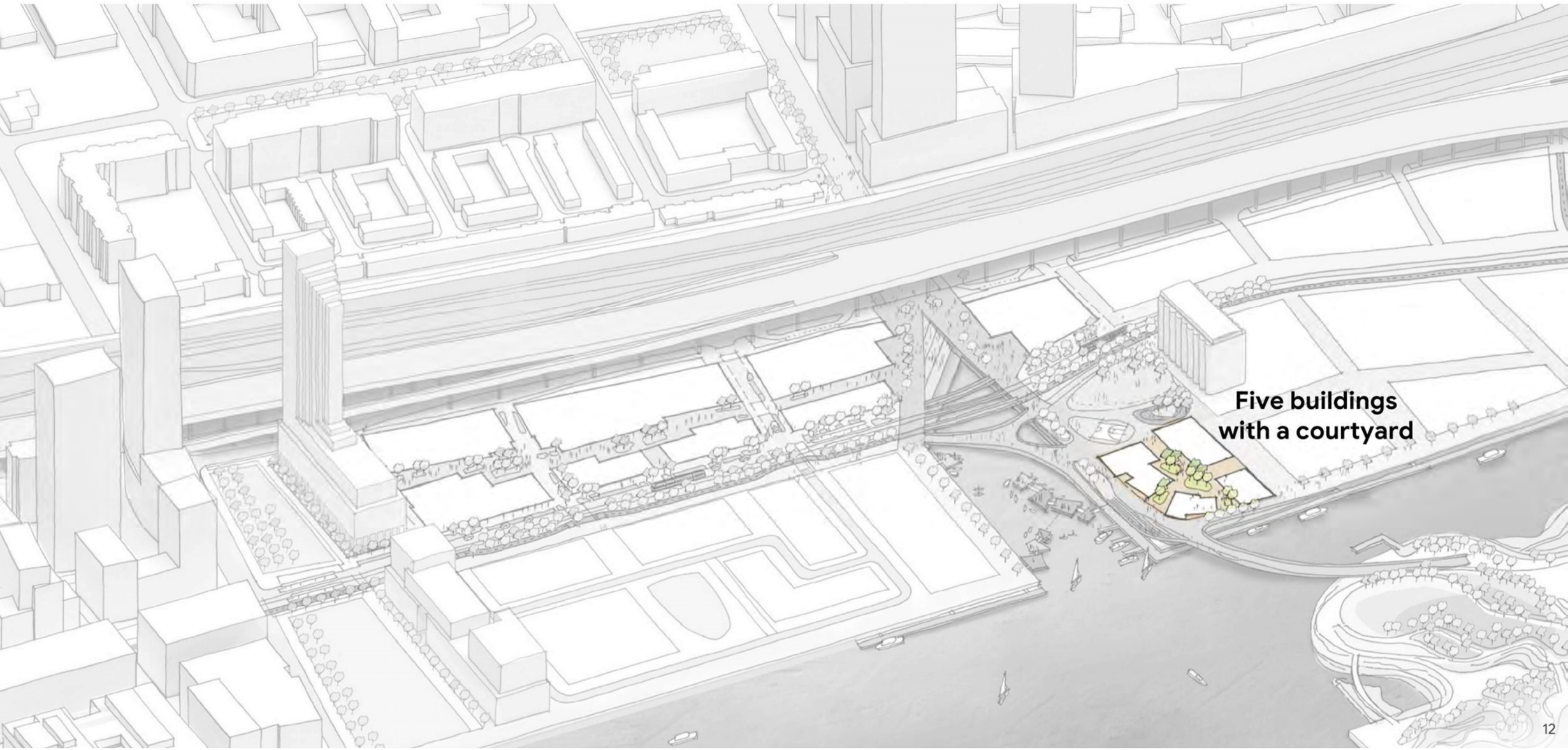
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Quayside – People-first Streets and Public Realm



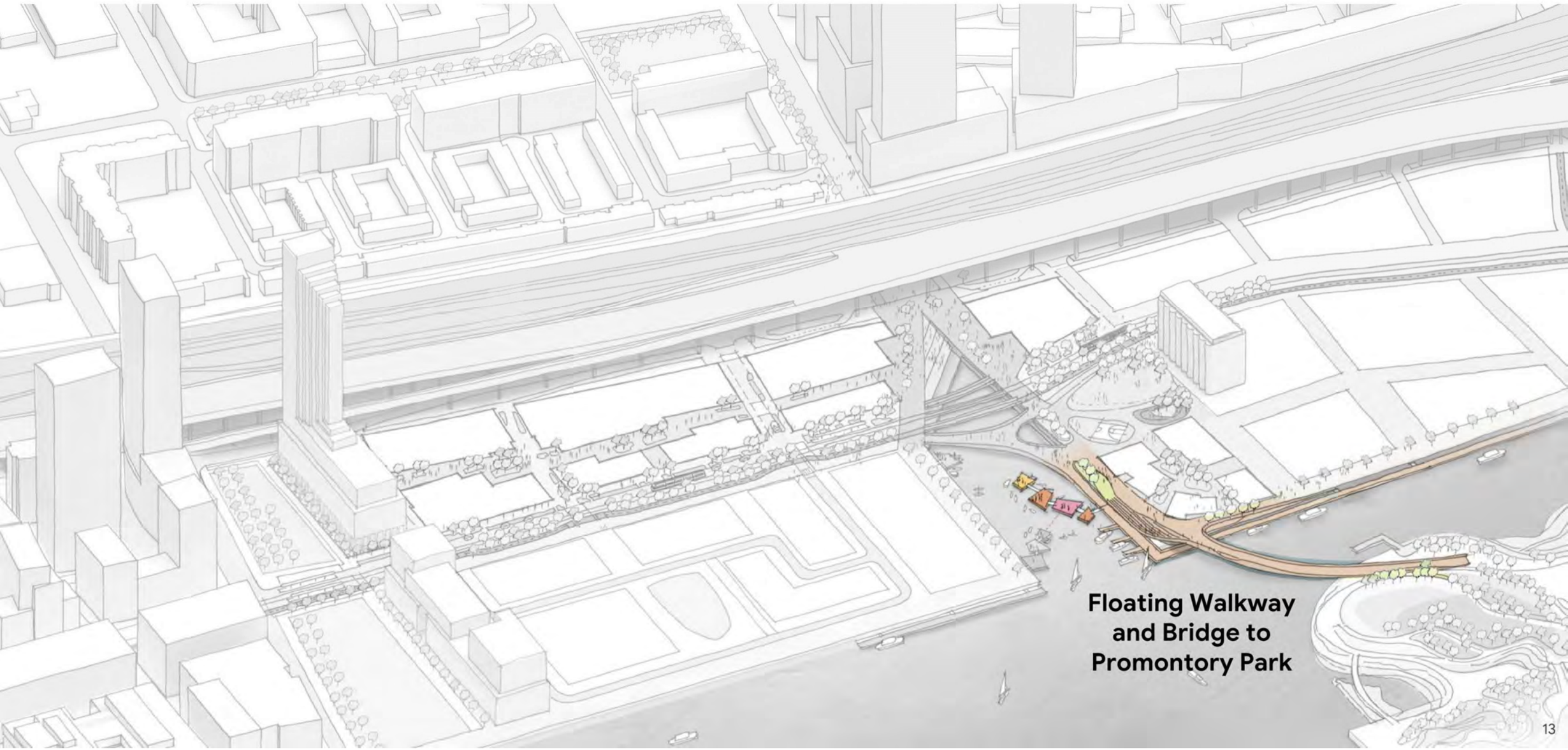
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Quayside – People-first Streets and Public Realm



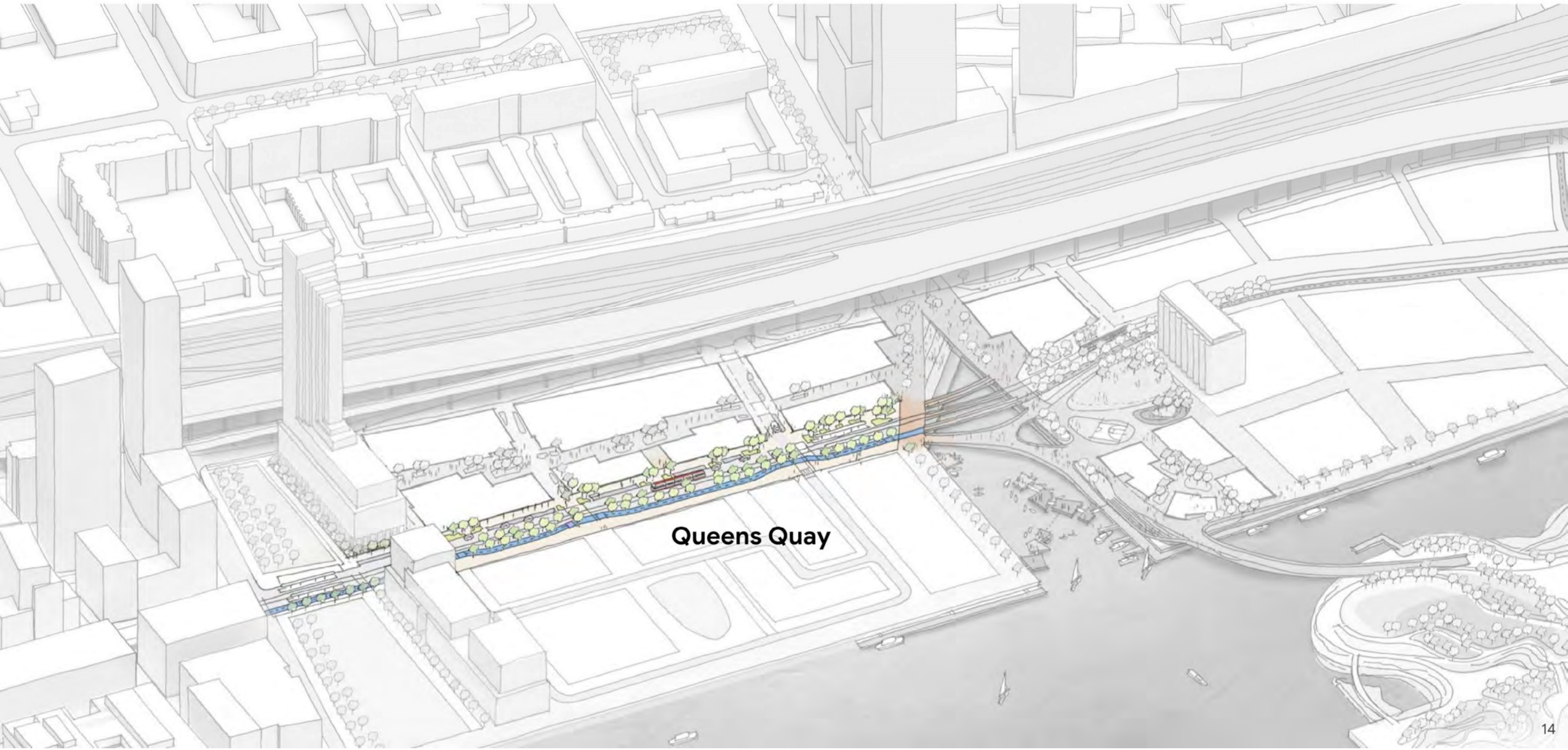
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Quayside – People-first Streets and Public Realm



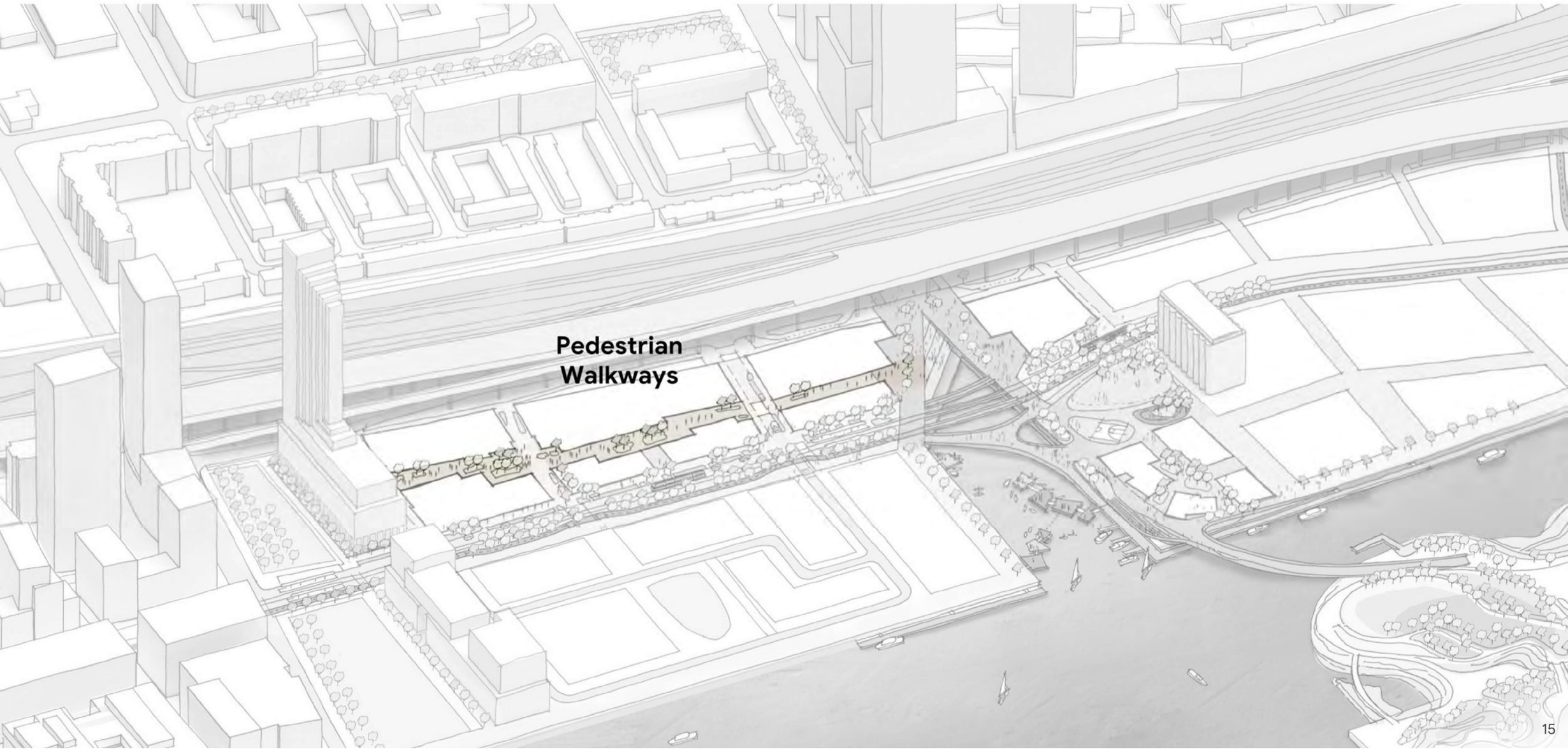
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Quayside – People-first Streets and Public Realm



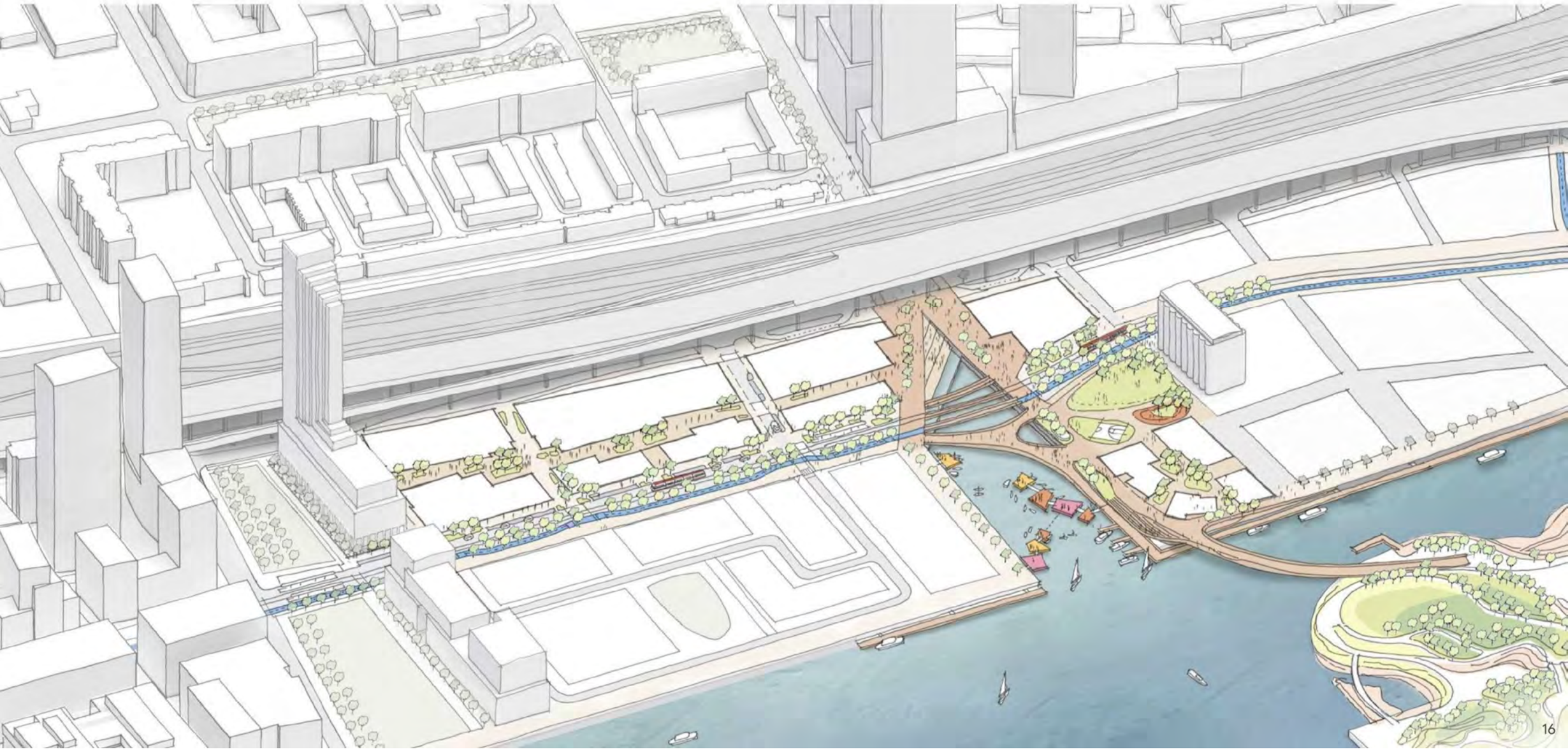
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Quayside – People-first Streets and Public Realm



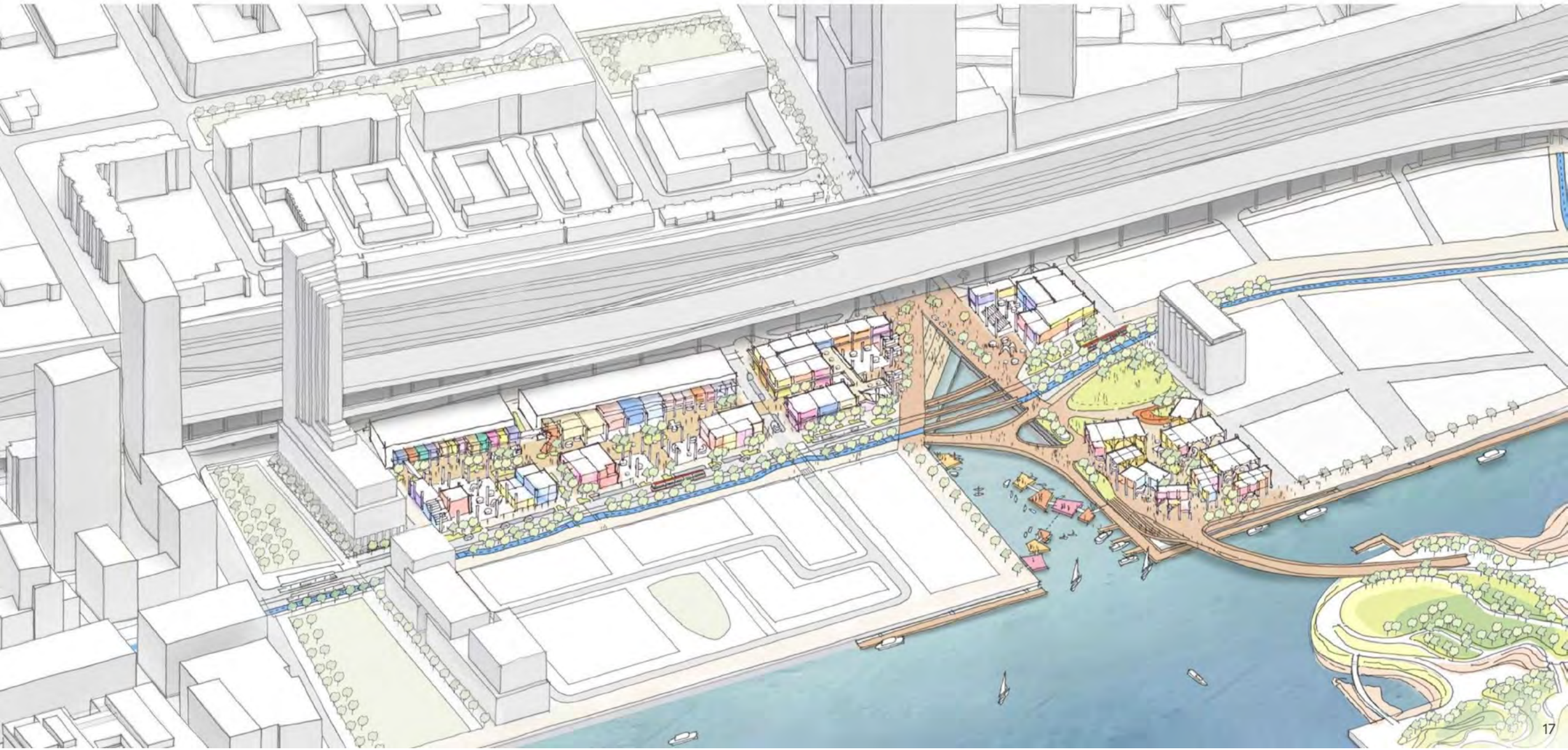
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Quayside – People-first Streets and Public Realm



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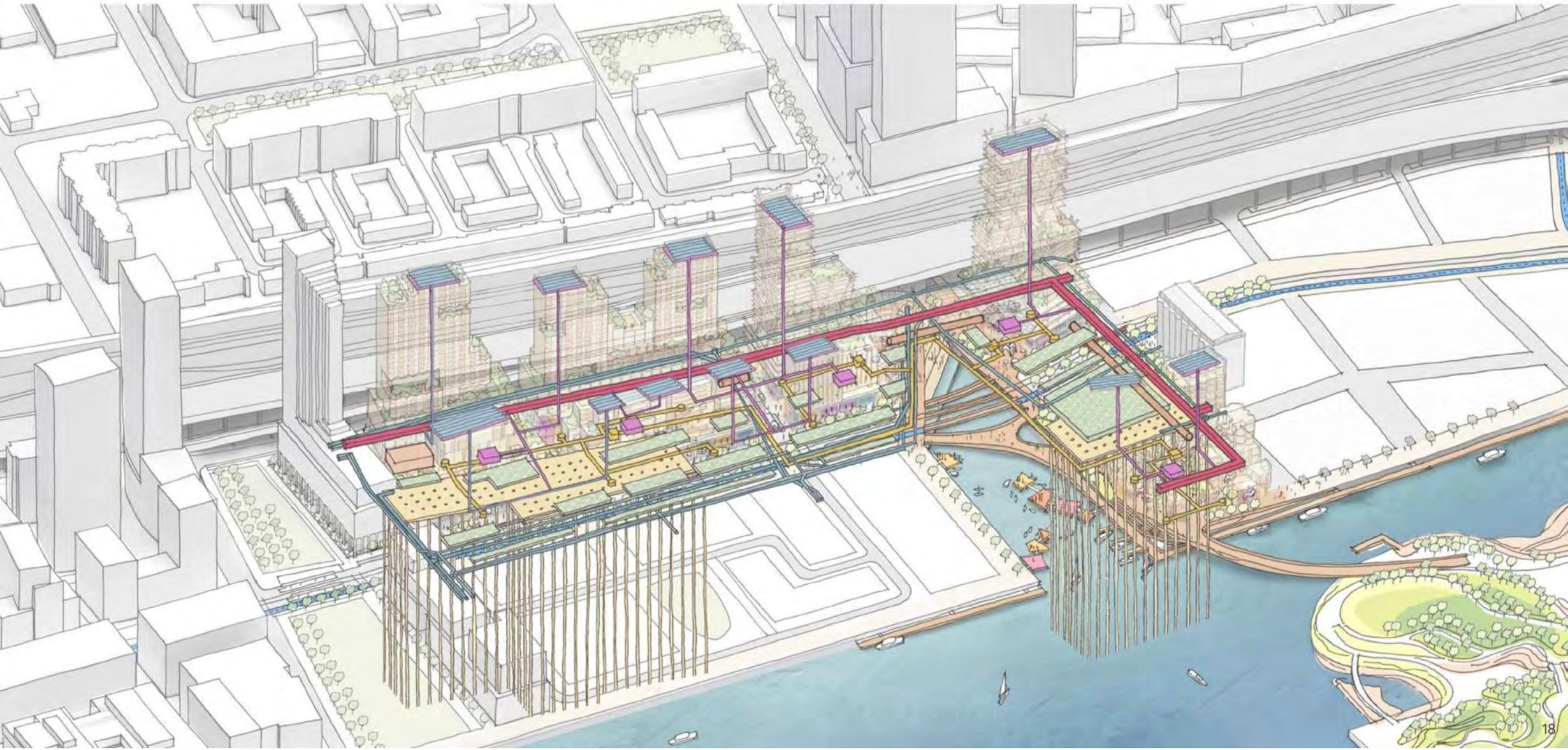
Quayside – Animating Ground Floor Spaces



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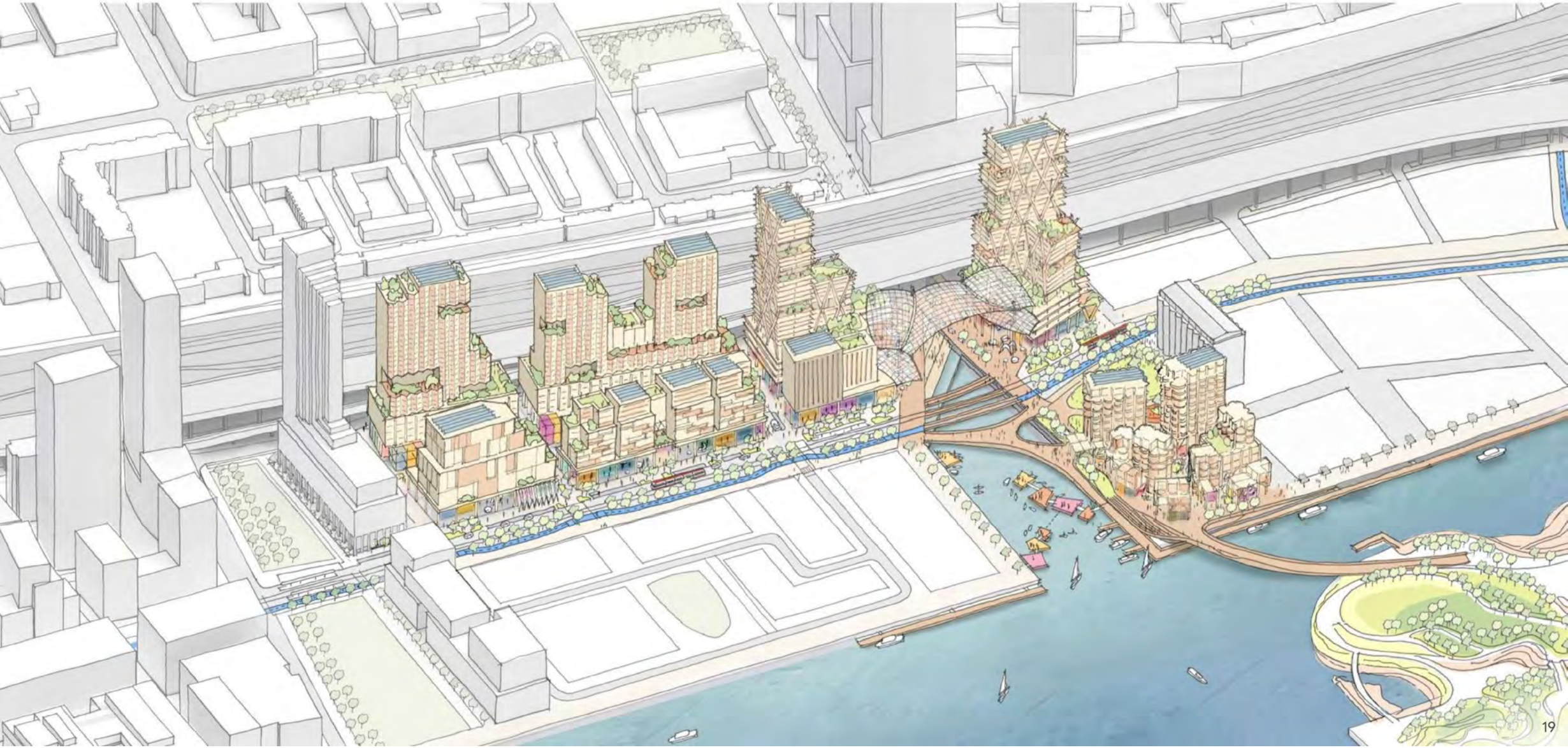
Quayside – Providing Sustainable Infrastructure

SIDEWALK TORONTO



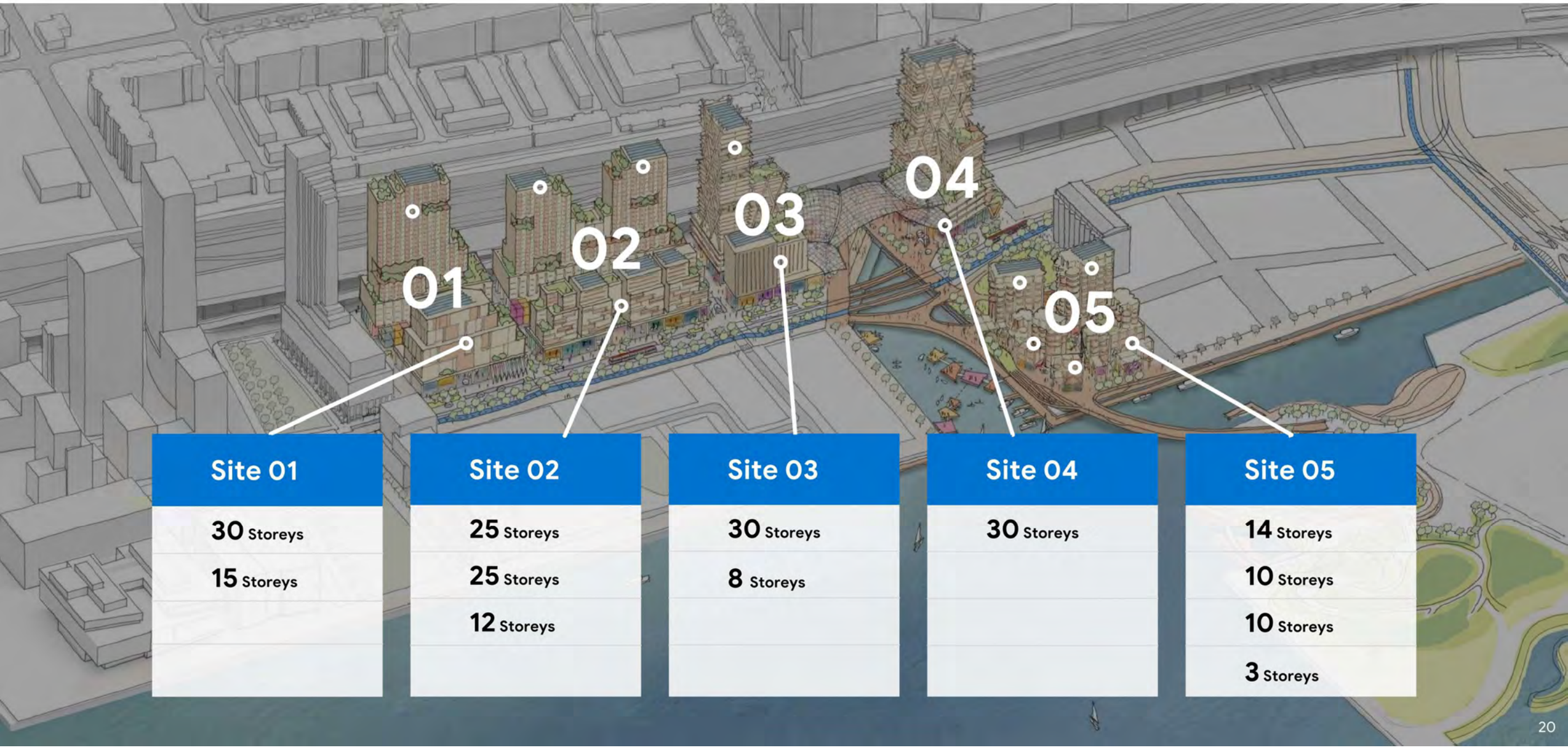
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Quayside – Building Mass Timber



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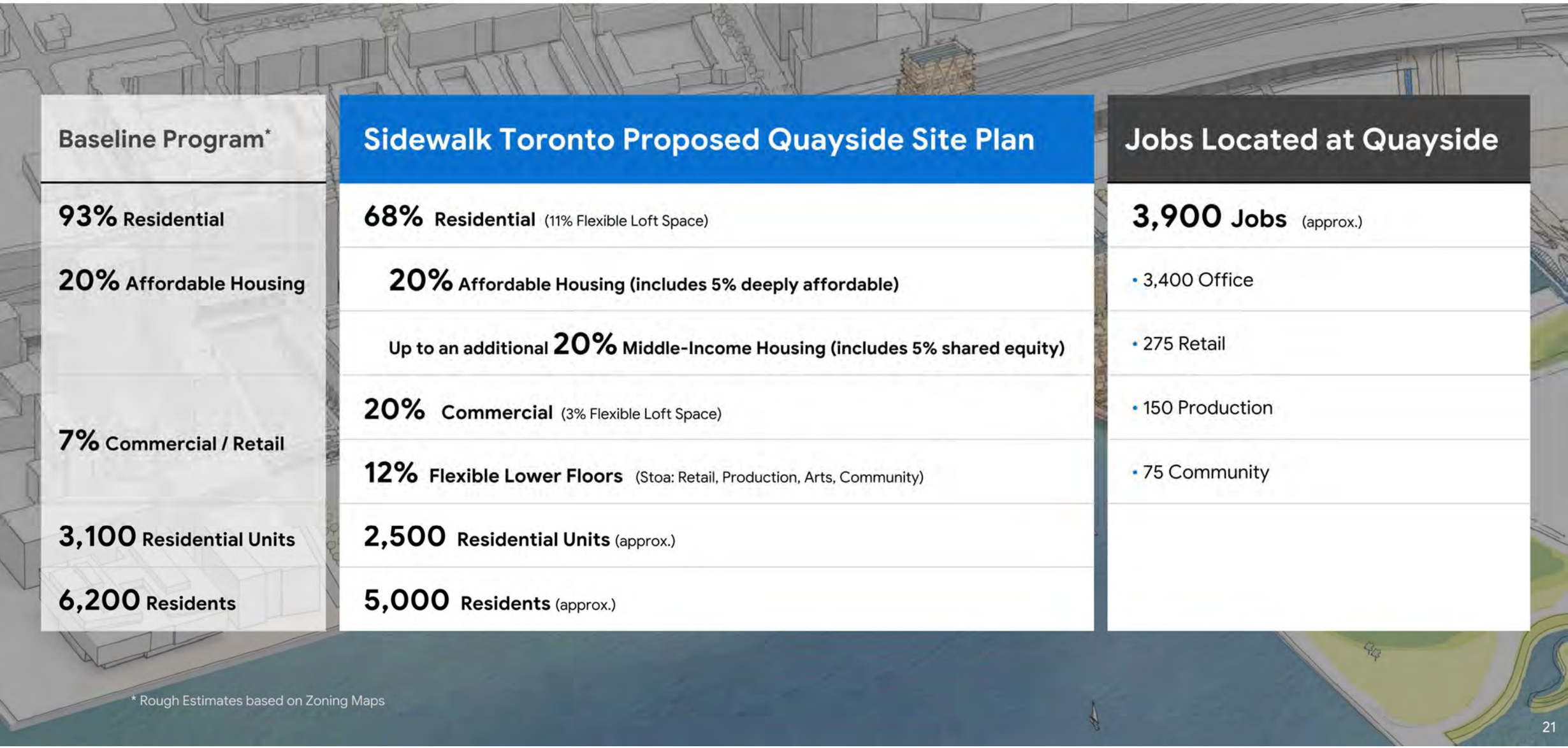
Quayside Draft Plan – Proposed Program Density up to 3.3M SF



Site 01	Site 02	Site 03	Site 04	Site 05
30 Storeys	25 Storeys	30 Storeys	30 Storeys	14 Storeys
15 Storeys	25 Storeys	8 Storeys		10 Storeys
	12 Storeys			10 Storeys
				3 Storeys

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Quayside Program – Proposed Program Density up to 3.3M SF



Baseline Program*	Sidewalk Toronto Proposed Quayside Site Plan	Jobs Located at Quayside
93% Residential	**68%** Residential (11% Flexible Loft Space)	**3,900** Jobs (approx.)
20% Affordable Housing	**20%** Affordable Housing (includes 5% deeply affordable)	• 3,400 Office
	Up to an additional **20%** Middle-Income Housing (includes 5% shared equity)	• 275 Retail
7% Commercial / Retail	**20%** Commercial (3% Flexible Loft Space)	• 150 Production
	12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)	• 75 Community
3,100 Residential Units	**2,500** Residential Units (approx.)	
6,200 Residents	**5,000** Residents (approx.)	

* Rough Estimates based on Zoning Maps

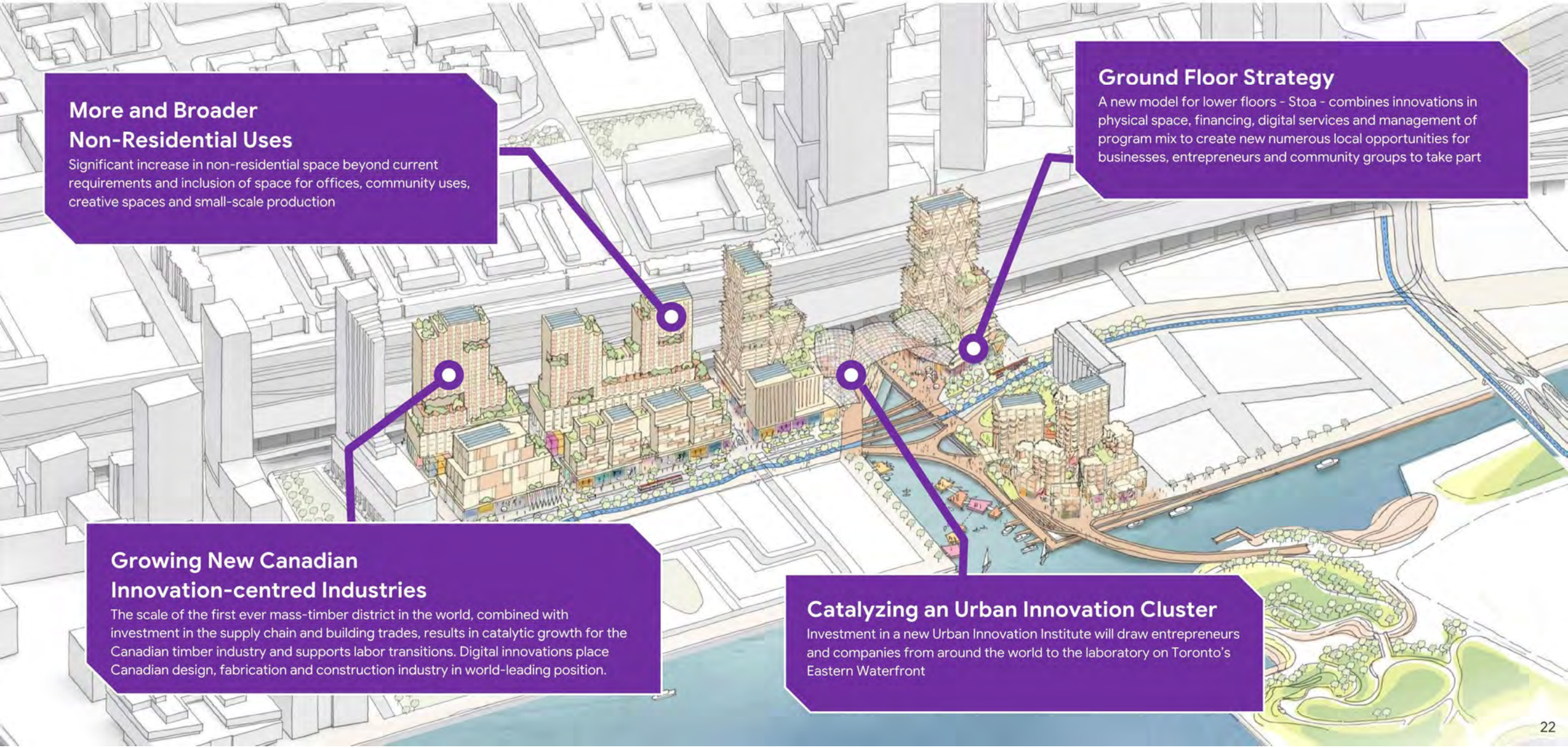
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Quayside – 3,900 Jobs

Quayside will be the beginning of a new approach to urban development on Toronto's Waterfront that sets a new standard for urban development in the 21st century.

Job Creation | Climate Positive | Affordability & Inclusivity | New Mobility

SIDEWALK TORONTO



More and Broader Non-Residential Uses

Significant increase in non-residential space beyond current requirements and inclusion of space for offices, community uses, creative spaces and small-scale production

Ground Floor Strategy

A new model for lower floors - Stoa - combines innovations in physical space, financing, digital services and management of program mix to create new numerous local opportunities for businesses, entrepreneurs and community groups to take part

Growing New Canadian Innovation-centred Industries

The scale of the first ever mass-timber district in the world, combined with investment in the supply chain and building trades, results in catalytic growth for the Canadian timber industry and supports labor transitions. Digital innovations place Canadian design, fabrication and construction industry in world-leading position.

Catalyzing an Urban Innovation Cluster

Investment in a new Urban Innovation Institute will draw entrepreneurs and companies from around the world to the laboratory on Toronto's Eastern Waterfront

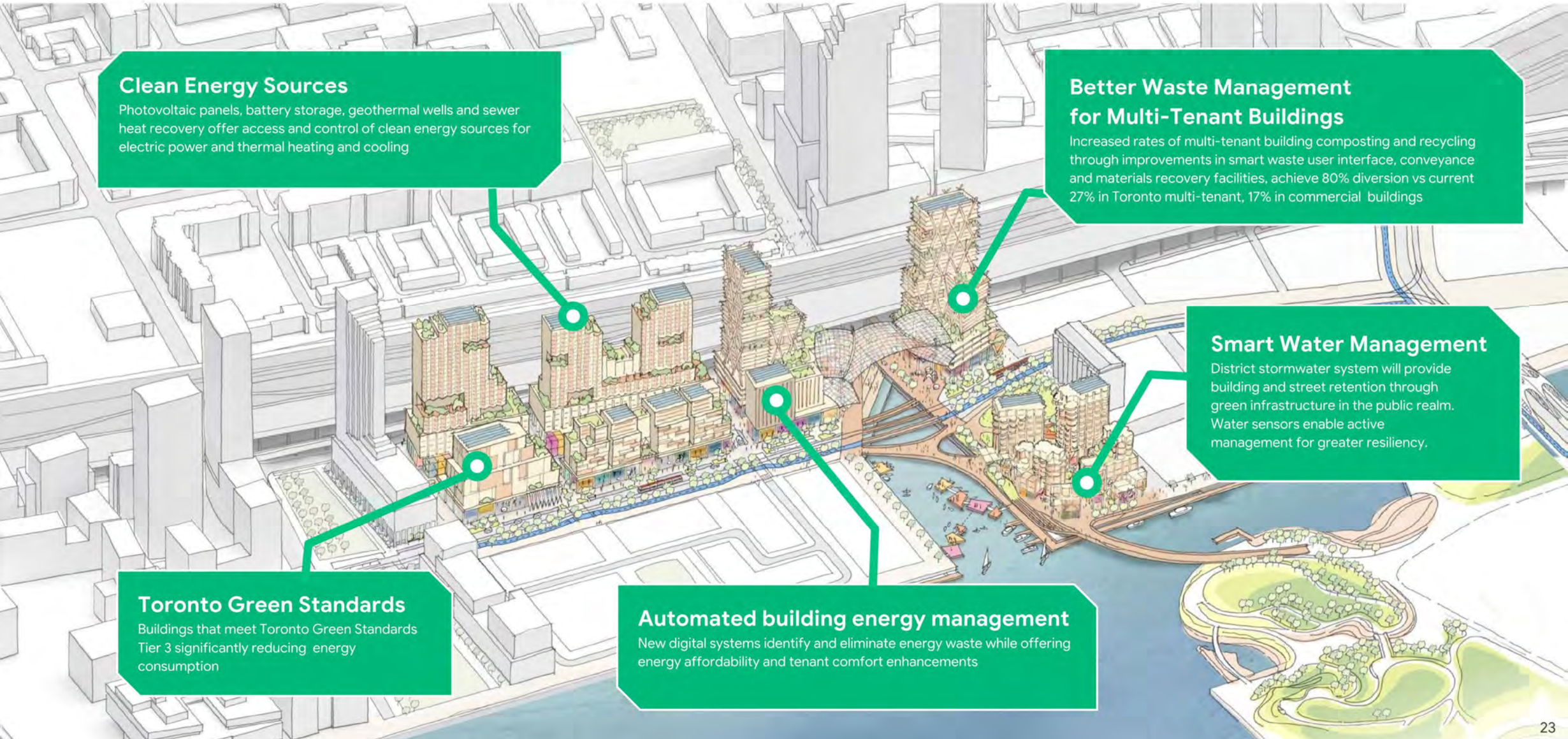
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Quayside – 75%-85% Reduction in GHG

Job Creation | **Climate Positive** | Affordability & Inclusivity | New Mobility

SIDEWALK TORONTO

In its initial real estate development, Sidewalk Labs will invest in a series of innovations that drastically reduce the level greenhouse gas (GHG) emissions, enable smarter management of resources, and reduce the cost of future upgrade and maintenance to the system.



Clean Energy Sources

Photovoltaic panels, battery storage, geothermal wells and sewer heat recovery offer access and control of clean energy sources for electric power and thermal heating and cooling

Better Waste Management for Multi-Tenant Buildings

Increased rates of multi-tenant building composting and recycling through improvements in smart waste user interface, conveyance and materials recovery facilities, achieve 80% diversion vs current 27% in Toronto multi-tenant, 17% in commercial buildings

Smart Water Management

District stormwater system will provide building and street retention through green infrastructure in the public realm. Water sensors enable active management for greater resiliency.

Toronto Green Standards

Buildings that meet Toronto Green Standards Tier 3 significantly reducing energy consumption

Automated building energy management

New digital systems identify and eliminate energy waste while offering energy affordability and tenant comfort enhancements

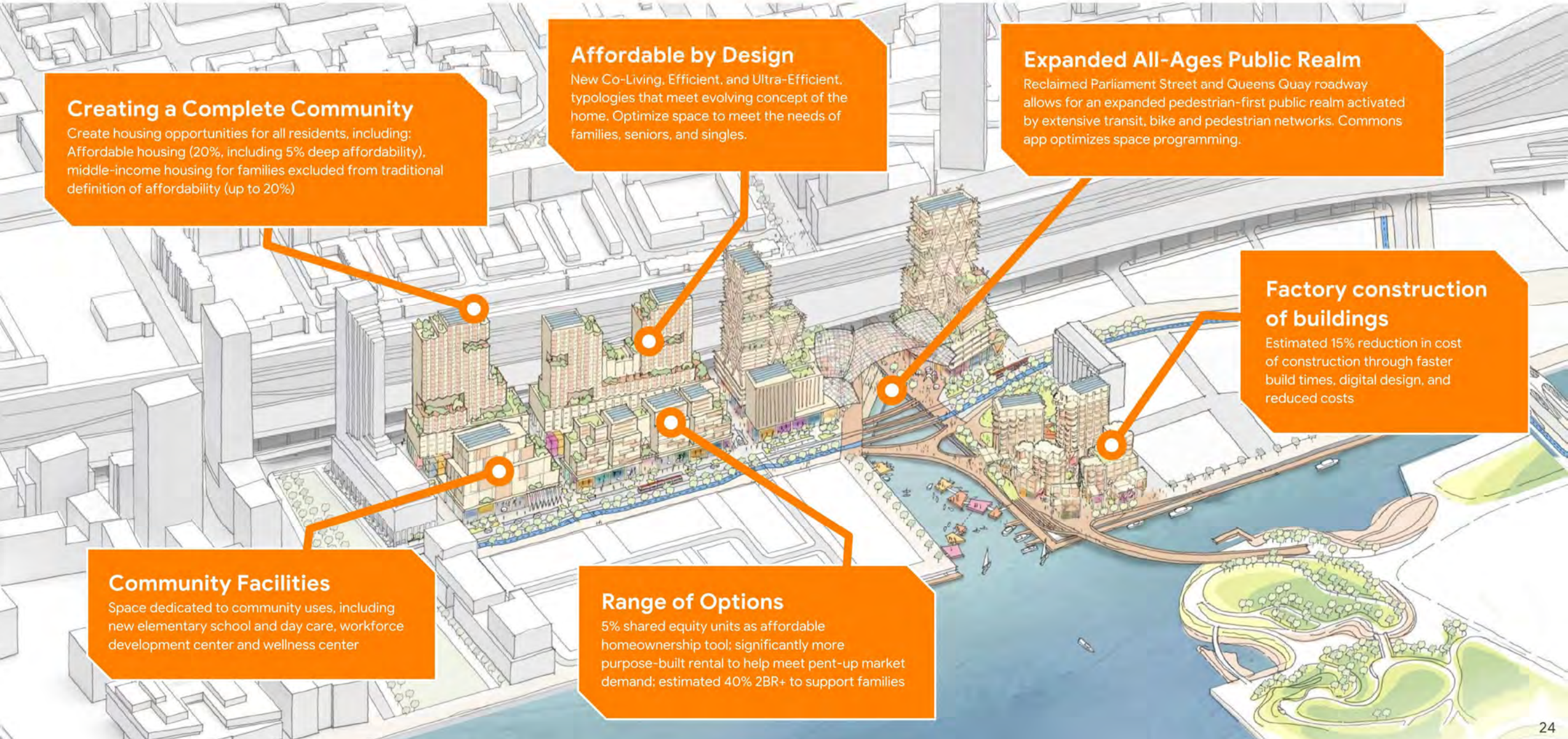
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Quayside – Up to 40% Below-Market Housing

Housing affordability continues to worsen and is threatening Toronto's tradition of creating inclusive communities.

Job Creation | Climate Positive | **Affordability & Inclusivity** | New Mobility

SIDEWALK TORONTO



Creating a Complete Community

Create housing opportunities for all residents, including: Affordable housing (20%, including 5% deep affordability), middle-income housing for families excluded from traditional definition of affordability (up to 20%)

Affordable by Design

New Co-Living, Efficient, and Ultra-Efficient, typologies that meet evolving concept of the home. Optimize space to meet the needs of families, seniors, and singles.

Expanded All-Ages Public Realm

Reclaimed Parliament Street and Queens Quay roadway allows for an expanded pedestrian-first public realm activated by extensive transit, bike and pedestrian networks. Commons app optimizes space programming.

Factory construction of buildings

Estimated 15% reduction in cost of construction through faster build times, digital design, and reduced costs

Community Facilities

Space dedicated to community uses, including new elementary school and day care, workforce development center and wellness center

Range of Options

5% shared equity units as affordable homeownership tool; significantly more purpose-built rental to help meet pent-up market demand; estimated 40% 2BR+ to support families

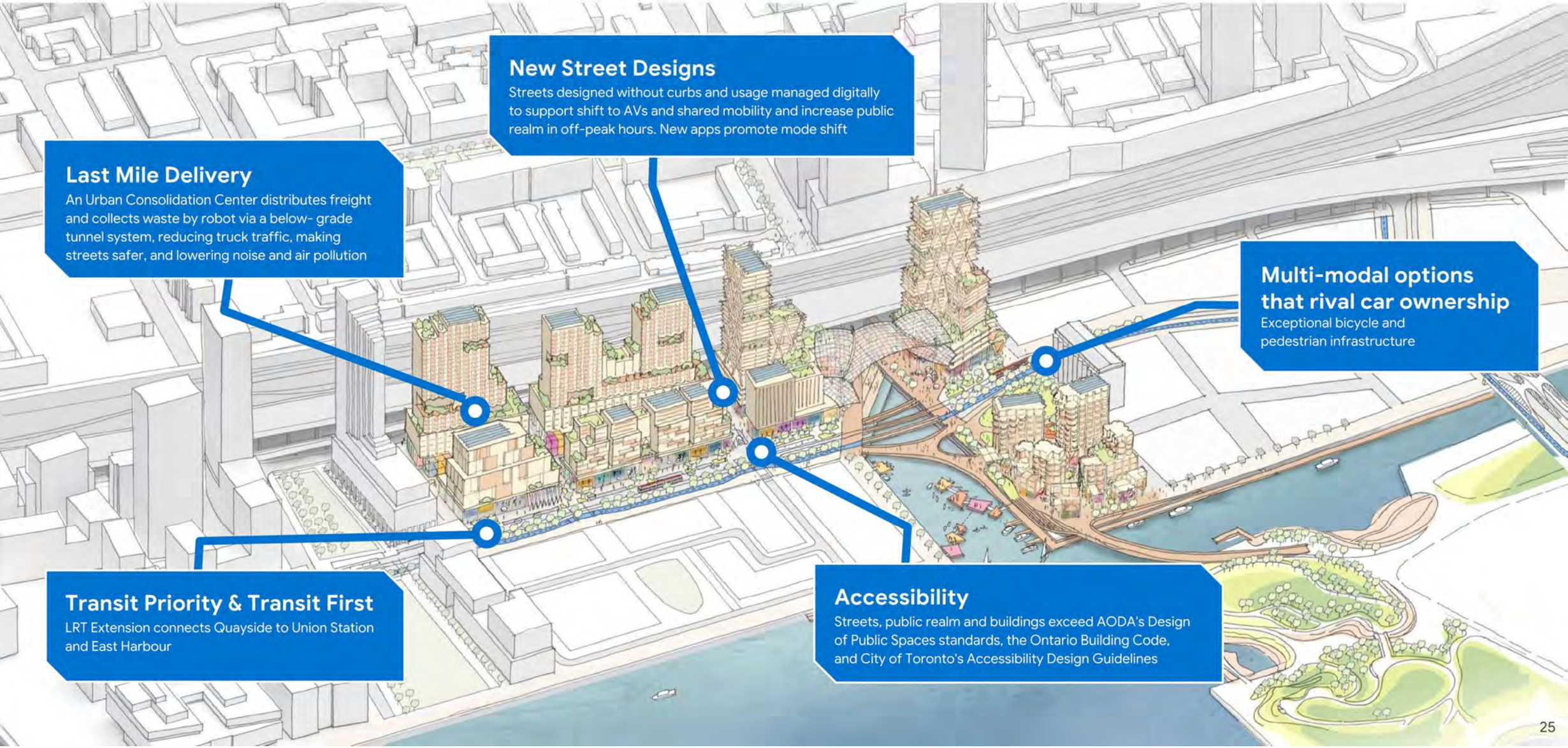
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Quayside – Reducing Congestion and Improving Safety

Growth is creating challenges to traditional ways of moving around, but support for transit and innovations in mobility management offer opportunities to help people and goods move easily.

Job Creation | Climate Positive | Affordability & Inclusivity | **New Mobility**

SIDEWALK TORONTO



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Quayside Site Plan

3,900+ Jobs

Office, retail, production and community services-related employment located at Quayside.

Canadian Mass Timber

Catalyzing the Canadian timber industry through an entire district built with mass timber, resulting in new jobs in Ontario and 15% reduction in cost of construction, yet conserving the same livable space.

Up to 40% Below-Market Housing

20% affordable housing, including 5% deep affordability, and up to 20% middle-income housing including mid-range rental and shared equity.

Towards Climate Positive

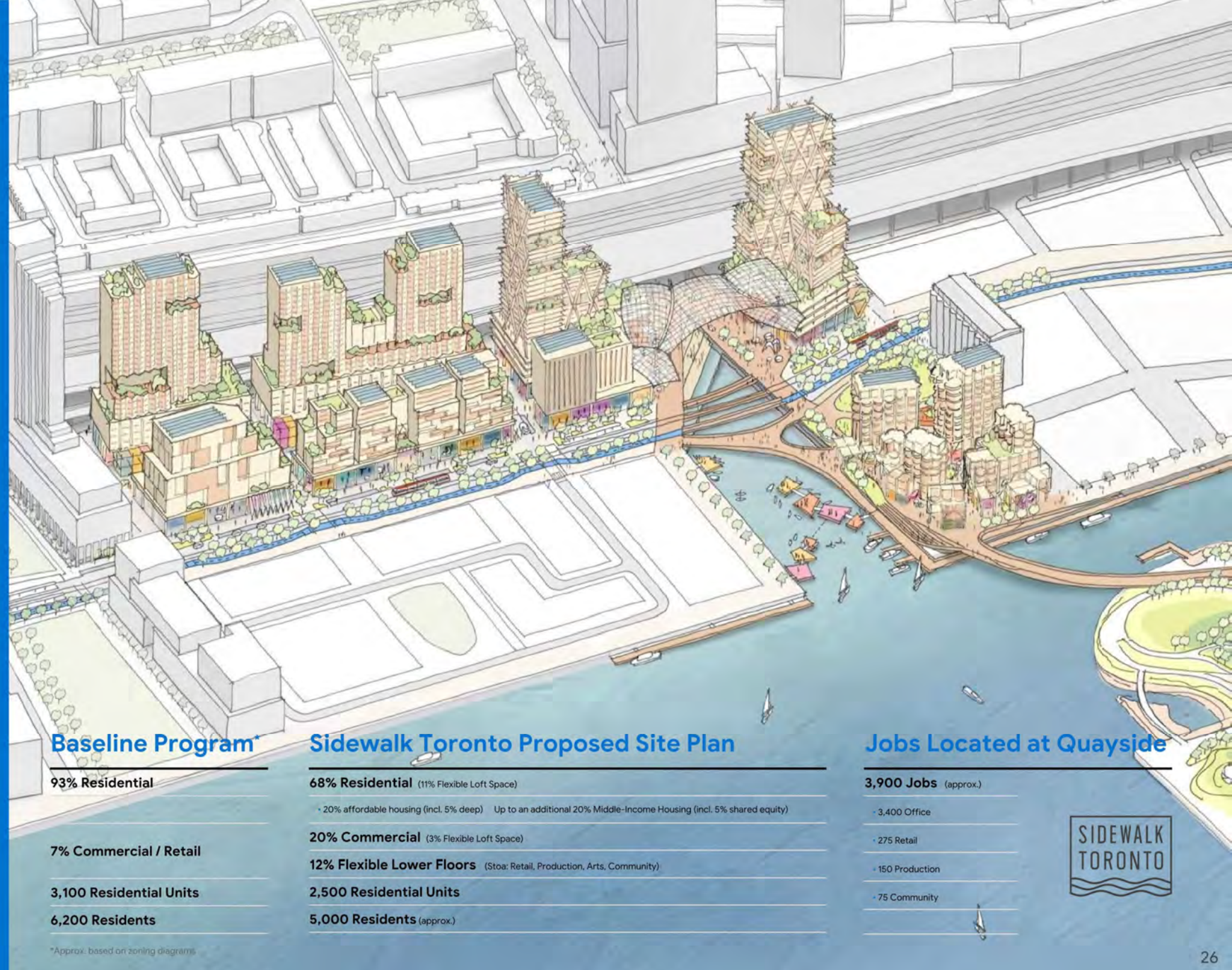
Targeting 75 - 85% reduction in greenhouse gas emissions at Quayside compared to standard development: from 6.3 tons CO_2 per Torontonian, to <1 ton per Quaysider.

Streets that Work

New mobility including support for the Light Rail Transit, a Vision Zero neighbourhood, and getting ready for an automated vehicle future.

Civic Data Trust

Independent governance over the collection and use of urban data, to protect privacy, promote innovation, and safeguard the public interest.



Baseline Program*

93% Residential

7% Commercial / Retail

3,100 Residential Units

6,200 Residents

*Approx. based on zoning diagrams

Sidewalk Toronto Proposed Site Plan

68% Residential (11% Flexible Loft Space)

- 20% affordable housing (incl. 5% deep) Up to an additional 20% Middle-Income Housing (incl. 5% shared equity)

20% Commercial (3% Flexible Loft Space)

12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)

2,500 Residential Units

5,000 Residents (approx.)

Jobs Located at Quayside

3,900 Jobs (approx.)

- 3,400 Office
- 275 Retail
- 150 Production
- 75 Community

SIDEWALK TORONTO

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SIDEWALK TORONTO

THANK YOU

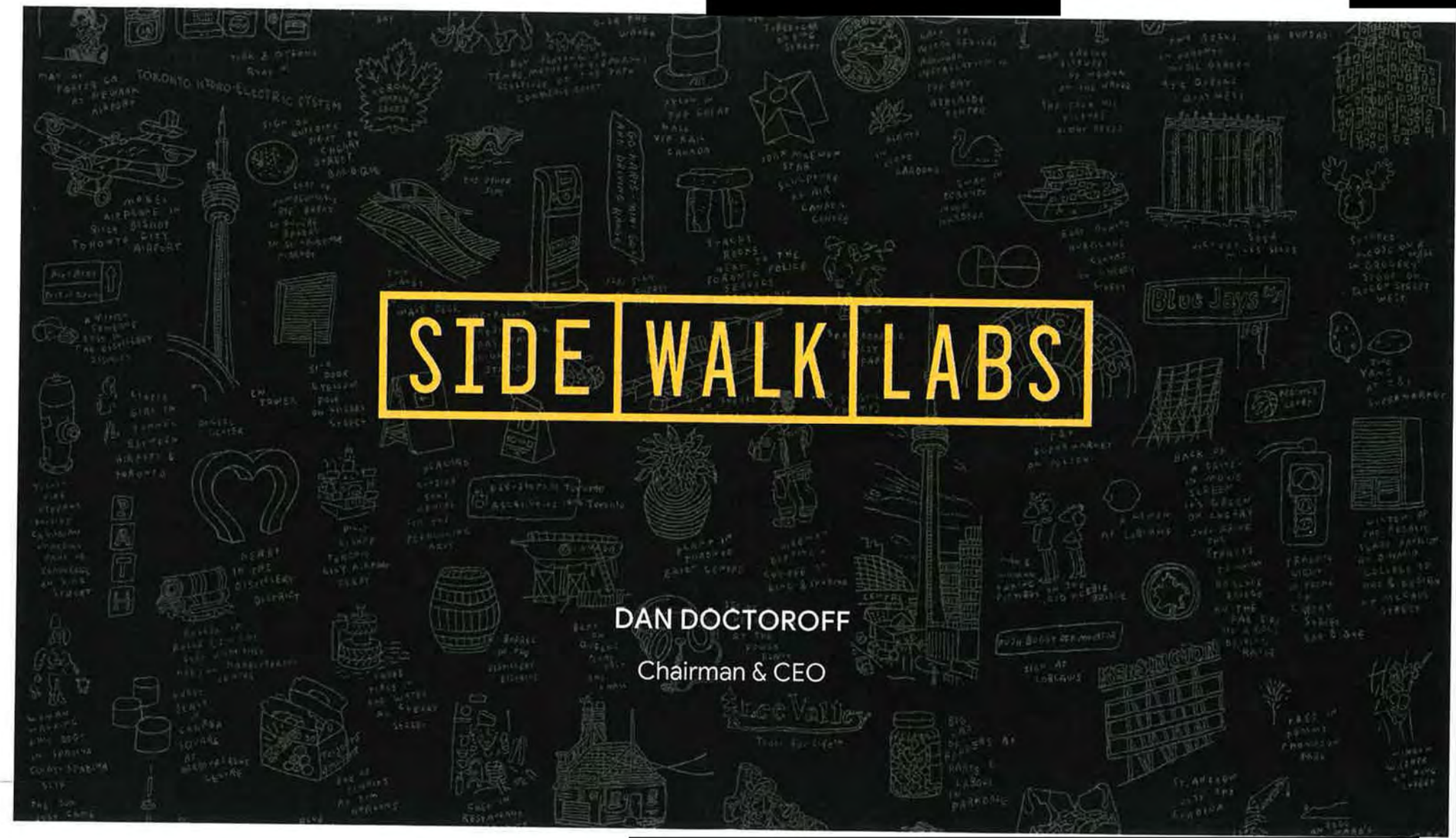
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Who We Are

SIDEWALK LABS

The New York Times

TECHNOLOGY

Sidewalk Labs, a Start-Up Created by Google, Has Bold Aims to Improve City Living

June, 2015

The Silicon Valley giant is starting and funding an independent company dedicated to coming up with new technologies to improve urban life. The start-up, Sidewalk Labs, will be headed by Daniel L. Doctoroff, former deputy mayor of New York City for economic development and longtime right-hand associate of Bloomberg L.P. Mr. Doctoroff jointly conceived the idea for the company, which will be based in New York, with a team at Google, led by its chief executive, Larry Page.

The founders describe Sidewalk Labs as an "urban innovation company" that will pursue technologies to cut pollution, curb energy use, streamline transportation and reduce the cost of city living. To achieve that goal, Mr. Doctoroff said Sidewalk Labs planned to build technology itself, buy it and invest in partnerships.

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Sidewalk's Journey

SIDEWALK LABS

STUDIED every prior "smart city" attempt

BUILT a team to bridge the technologist / urban divide

CONVENED working groups with the world's foremost experts

FOCUSED on opportunities for district-scale innovation

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Looked Far and Wide for the Perfect Location



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Focused in on Toronto

SIDEWALK LABS

IDENTIFIED TORONTO as the ideal place to bring the vision to life

RECOGNIZED QUAYSIDE RFP as an ideal opportunity

- Gov't Alignment / Waterfront Toronto's Proven Track Record / Proximity to Downtown
- Unequaled Diversity / Tech Ecosystem
- Widening gap between values of inclusivity and reality

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A Vision Emerged for a Neighbourhood of the Future

ENABLE meaningful improvement in quality of life for a diverse population

ATTRACT a 21st century economy, including urban innovation

PROVIDE financial viability for long-term investors

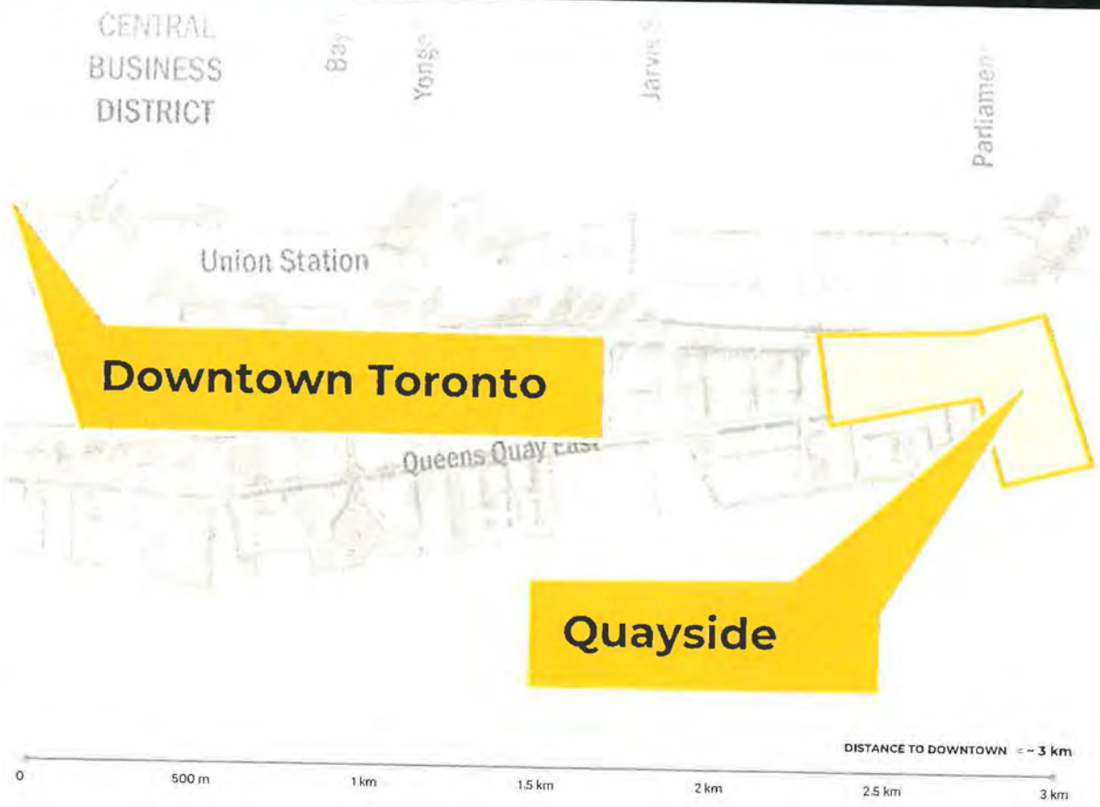
SERVE as a replicable model for other cities

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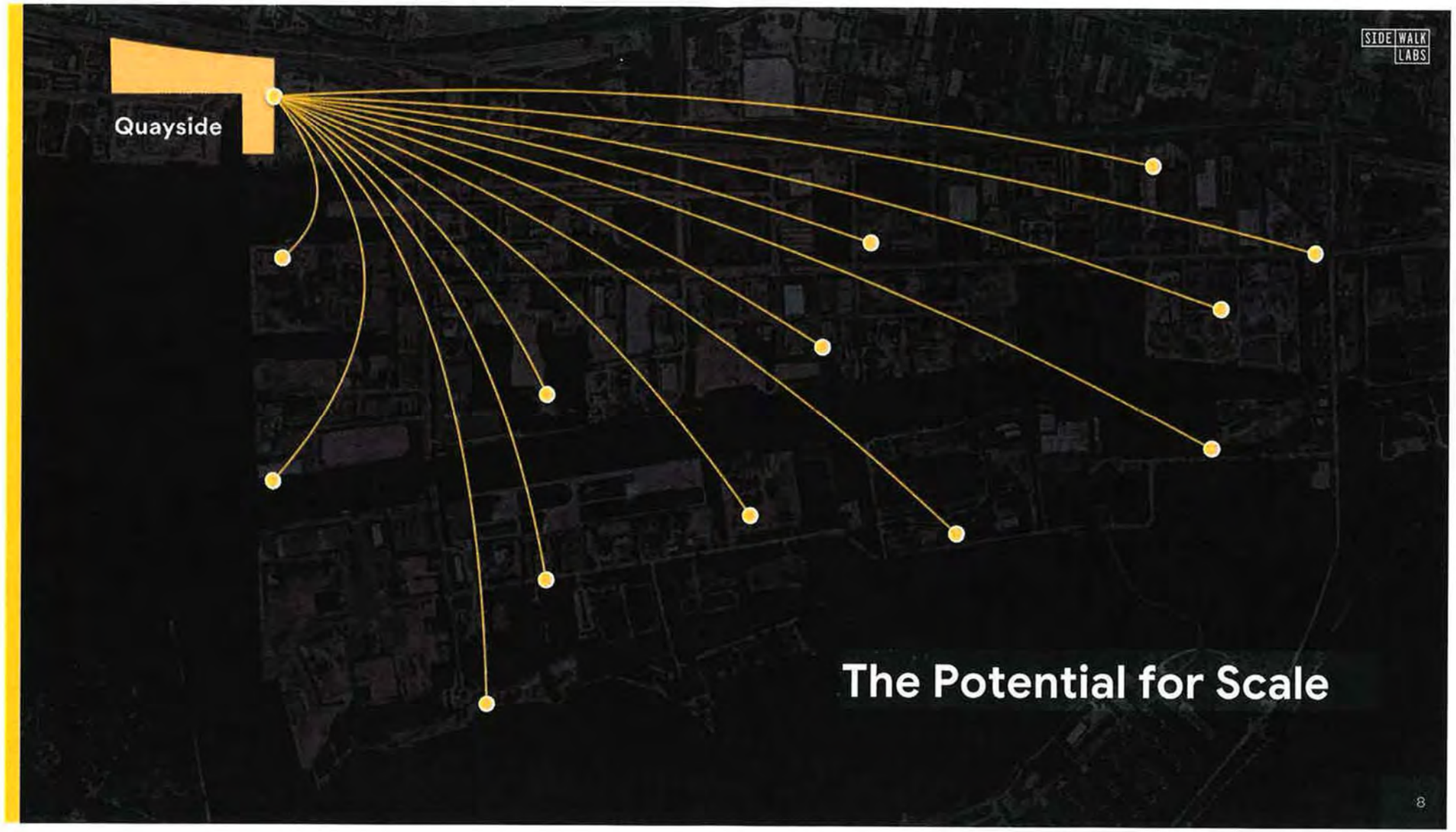
Quayside

A new type of mixed-use, complete community

SIDEWALK LABS



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Our Approach

A new type of mixed-use, complete community

SIDEWALK LABS

Buildings



A built environment that is more usable, efficient, and affordable

Mobility



A competitive, safer alternative to the private automobile for every trip

Public Realm



A public realm for the entire region that is delightful and vibrant year-round

Sustainability



A truly climate positive community

Social Infrastructure



A close-knit, healthy community with seamless access to vital daily services

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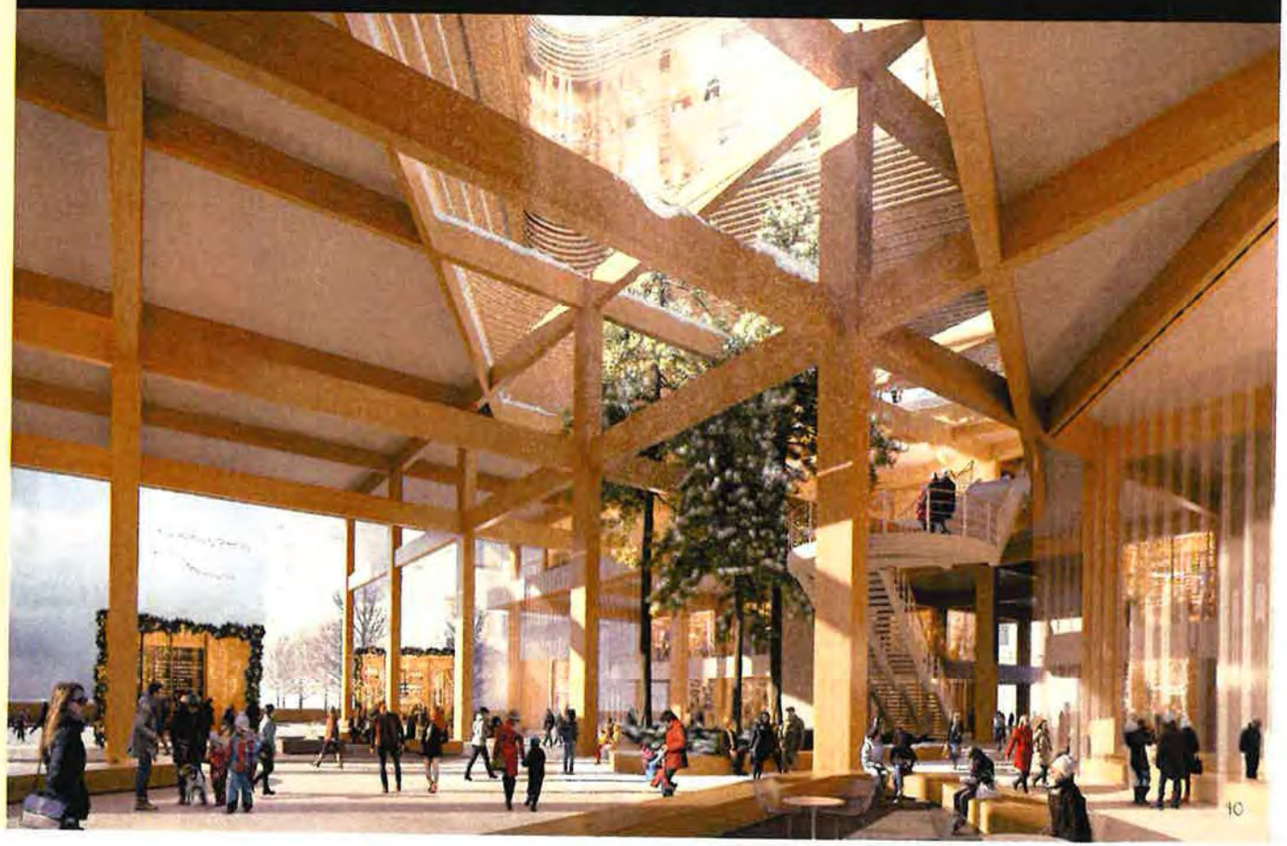
Buildings

Buildings that are more usable, efficient and affordable

- **ADAPTABILITY**
  Create structures that are more responsive to the needs of their users over time, both on day 1 and years later
- **COST REDUCTION**
  Reduce the cost of construction by leveraging scale through a manufactured approach to buildings
- **SUSTAINABILITY AND WELLNESS**
  Build at the highest sustainability standard which positively impacts the environment, lowers cost of utilities, and improves the occupants' well-being
- **DESIGN EXCELLENCE**
  Use innovative building design and architectural excellence on the waterfront

Key Goals: Sidewalk Toronto's Vision for Buildings

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Sidewalk Toronto's Plan for Buildings

SIDEWALK LABS



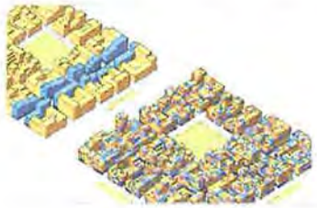
Radical Mixed-Use

Flexible structures enable radical mixed-use to occur more quickly and at lower cost – responding not only to market demand today but future needs



Flexible Typologies

Flexible spaces enable an adaptable mix of buildings and uses, helping a complete community meet changing needs for affordable housing options and vibrant amenities



Regulatory Frameworks

Outcome-based code is a new set of simplified, highly responsive rules for real-time monitoring, enabling truly mixed-use development to occur safely



Construction Technologies

Digitized construction modeling, robotic construction, on- and off-site automation, and 3D printing can lower construction costs and compress delivery times



Material Innovation (Tall Timber)

Advanced, sustainable materials can improve design flexibility and affordability. In Toronto, we are focusing on locally-sourced tall timber to achieve cost savings, increased speed of construction, and reduced environmental impact

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Sidewalk Toronto's Plan for Housing Affordability

There is no greater challenge facing Toronto than housing affordability. Sidewalk Toronto aims to provide more affordable housing, more middle-income housing, and more overall housing options for more people through a suite of policy and design innovations that can set a new standard for other neighbourhoods across Toronto and other cities around the world.

To achieve this vision of a truly mixed income diverse neighbourhood our plan will include:

- **More affordable housing**. We aim to **dramatically exceed** requirements for traditional affordable housing units on Toronto's waterfront.
- **More rentals**. We aim to build a significant portion of the development as purpose-built rentals, demonstrating the way forward for other Toronto developers on this essential housing type crucial for affordability.
- **More middle-income housing**. We want to expand the definition of housing affordability and provide options for middle income households.
- **More housing opportunities**. We will test innovative financial and policy structures to address barriers to housing, including shared equity programs that help middle-income households build partial equity, even if they cannot afford traditional homeownership.
- **More affordability by design**. We will leverage building technologies to lower the cost of construction and pass on some of the savings to residents. We also will rethink how we live by redesigning the home to create a more efficient, sustainable residential lifestyle (e.g., co-living).

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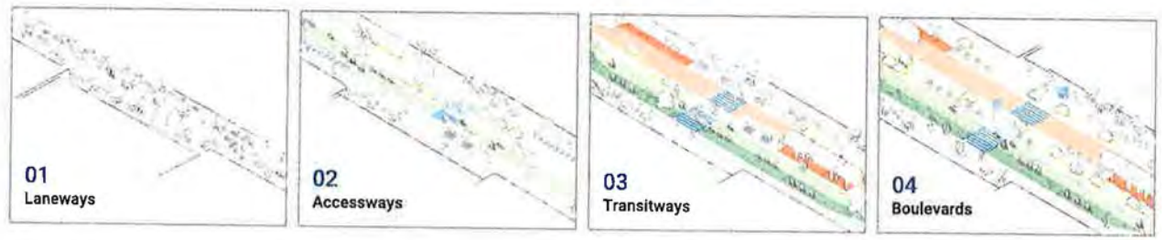
Mobility

A convenient network of mobility options that doesn't depend on the private automobile

- **EXPAND JOB ACCESS**
  Enable access to jobs in Quayside without needing a private car
- **REDUCE HOUSEHOLD COST**
  Significantly reduce annual household mobility costs
- **IMPROVE SAFETY**
  Achieve Vision Zero fatality rates
- **PROTECT THE ENVIRONMENT**
  Significantly reduce environmental impacts by replacing car trips with walking or cycling trips and replacing gas-powered trips with electric vehicles
- **EXPAND PUBLIC SPACE**
  Devote more space to public realm uses by dynamically reducing the space devoted to mobility uses to only what is needed

Key Goals: Sidewalk Toronto's Vision for Mobility

SIDEWALK LABS



2031 Current design of the mobility network



Boulevard **Before**



Transitway **After**



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Sidewalk Toronto's Mobility Plan

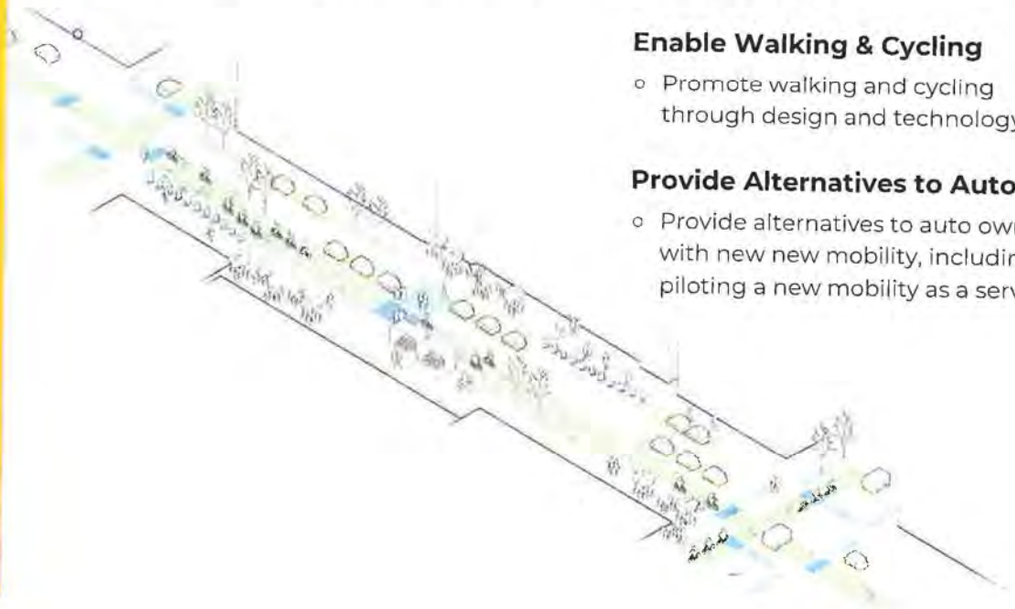
Provide a competitive alternative to the private automobile for every trip

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INITIATIVES

Extend the Transit Backbone

- Extend the transit backbone to Quayside and through the Port Lands



Create Streets for People

- Create streets for people making use of future AV

Enable Walking & Cycling

- Promote walking and cycling through design and technology

Provide Alternatives to Auto Ownership

- Provide alternatives to auto ownership with new new mobility, including AVs, and piloting a new mobility as a service offering

Implement a New Freight Transit System

- Create a freight transit system that reduces impact and cost

Manage the Streets

- Manage streets dynamically and optimally

Model for Optimization

- Build and use model to understand likely flows, mode shares, and impact

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Public Realm

The shared space of the community, it includes all spaces that are accessible to everyone, from parks to streets to the water to markets to shops. Our vision for the public realm includes:

- **MORE TIME SPENT OUTDOORS, TOGETHER** Foster happy and healthier communities through a vibrant, porous public realm that gives people new levels of agency over their environment
- **MORE SPACE** - Gained from AVs and rise of active transit
- **MORE USES** - For all ages and abilities
- **MORE TIME** - Usable year-round and active ~18 hrs/day
- **MORE PEOPLE** – Inclusive design and empowered community

Key Goals: Sidewalk Toronto's Vision for Public Realm

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Sidewalk Toronto's Public Realm Plan

Public space that reflects what people want

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Reshaping the Public Realm

Three strategies to create an expanded public realm

01

Returning to the Water

Enabling access to and interaction with Lake Ontario



02

Stoa

A new type of porous ground floor that responds to the community's changing needs over time



03

Design Streets for People

Put people and street life first while maximizing safety and convenience



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Sustainability

Forging the path to climate positive

1. Passive-house inspired (low energy) buildings
2. Autonomous building energy management
3. District-wide heat recovery and exchange for building heating and cooling
4. Customer-integrated power grid design and management to minimize cost and GHG
5. Customer feedback on waste generation and diversion from landfill
6. Actively-managed water systems, including stormwater
7. Accessible infrastructure that is easy to maintain, upgrade and sensor

Key Goals: Sidewalk Toronto's Vision for Sustainability

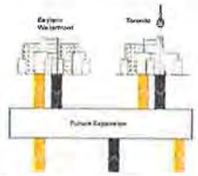
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1 Passive-house buildings



2 Building energy management



3 District-wide heat recovery and exchange



4 Customer-integrated power grid design



5 Customer feedback on waste generation



6 Actively-managed water systems,

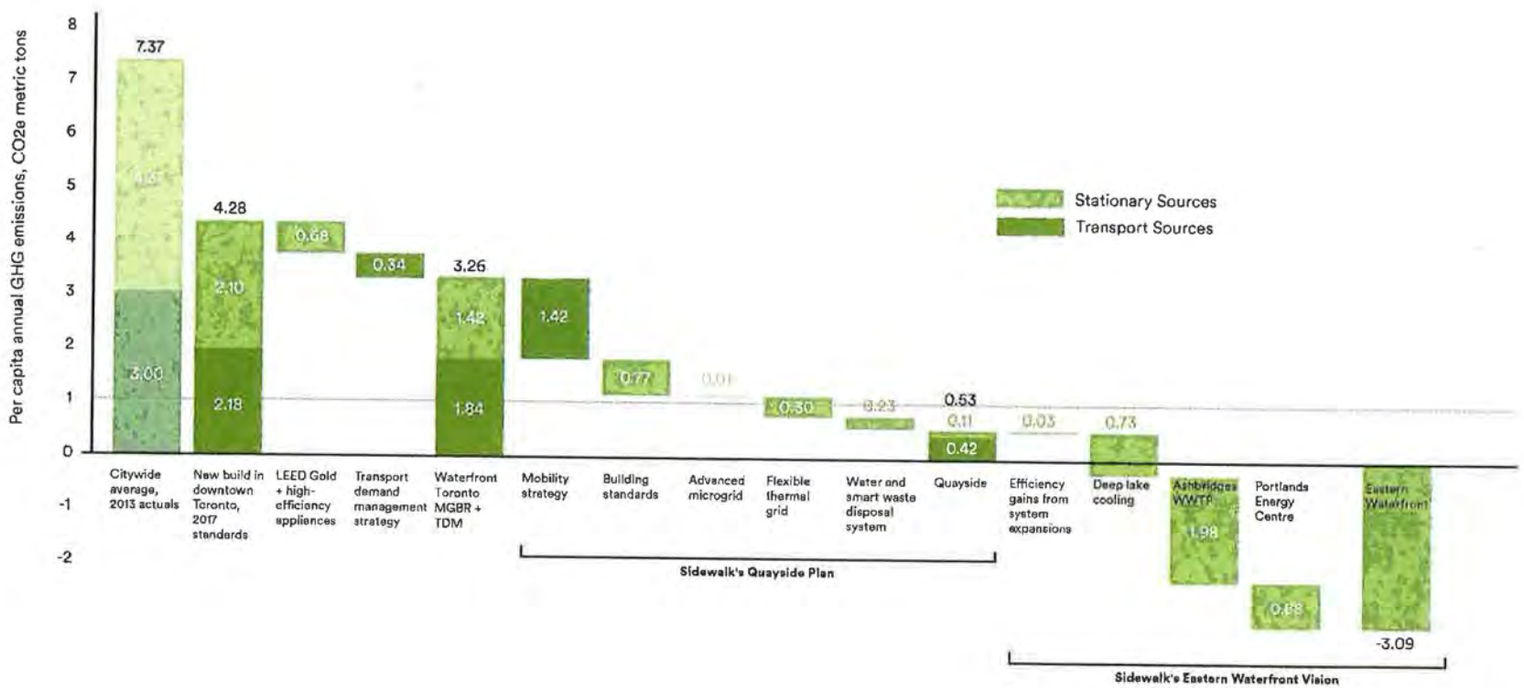


7 Accessible infrastructure that is easy to maintain

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Sidewalk Toronto's Sustainability Plan

Forging the path to climate positive



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Social Infrastructure

A holistic approach to community service delivery

- **HEALTH & WELL-BEING**
  Enabling a radically proactive, personalized and coordinated approach to health, care and well-being
- **EDUCATION & OPPORTUNITY**
  Pushing the boundaries of where, when, and how teaching and learning occur
- **CIVIC LIFE & ENGAGEMENT**
  Fostering a civically engaged community underpinned by deep social ties and a strong sense of pride and belonging

Key Goals: Sidewalk Toronto's Vision for Social Infrastructure

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Sidewalk Toronto's Plan for Social Infrastructure

Enabling city and community services innovation through partnership

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SWT does not intend to deliver city and community services but seeks to enable local providers and residents to advance their innovation efforts and priorities.

- **Build Community Anchor Sites** *(thematic community hubs)*
  - Care Hall: Co-located health & human service delivery and a steward of health and well-being for the community
  - Opportunity Hub: Co-located primary school, service delivery site for youth and workforce development supports
  - Civic Assembly: A community gathering place for digital literacy, community input, feedback and influence
- **Establish Service Delivery & Programming Partnerships**
  - Initiating partnerships with local organizations to enable innovation around the delivery of health and human services, education and community learning, workforce development and civic engagement
- **Catalyze Development & Adoption of Digital Compliments**
  - Community as a Classroom digital tool (Q-ED)
  - Digitally enabled neighbourhood association
  - Community Influence & Investment digital toolkit (i.e. Gather, Quayside Gives, Quayside Decides)
  - Digital health tools that address the social determinants of health and enhance connection to community resources
  - Research partnerships exploring links between urban data and health

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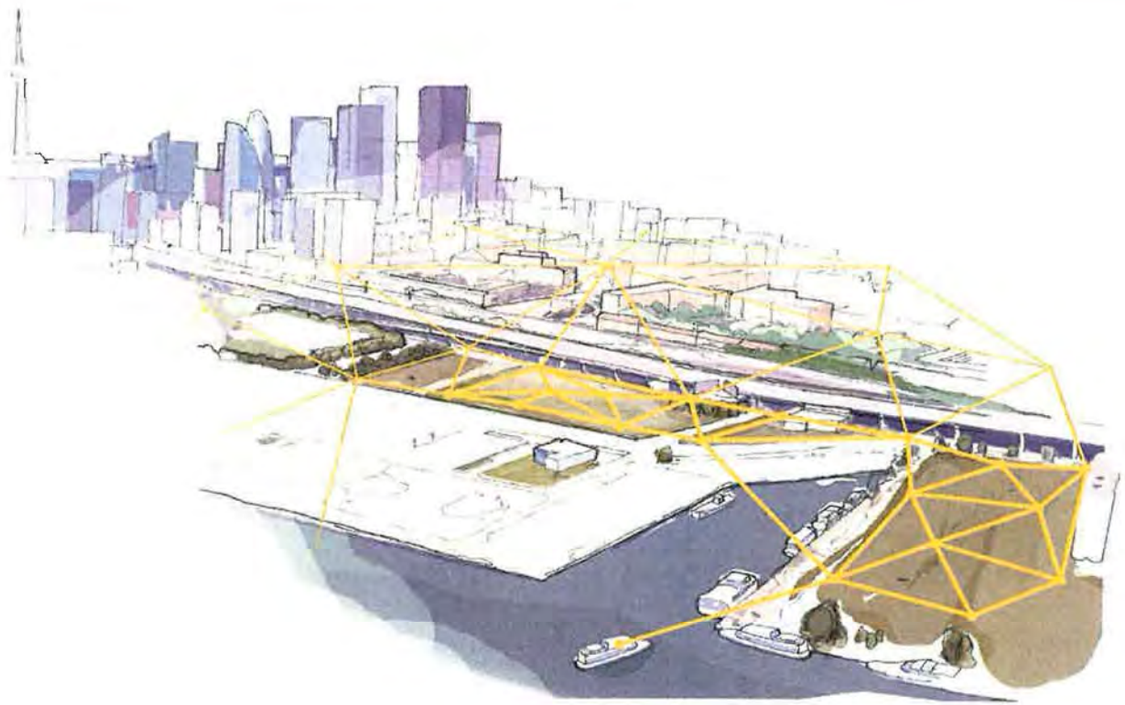
Data Governance

Our approach to digital governance is based on the position that:

- **INDEPENDENT GOVERNANCE** is necessary to protect personal and public interests across areas of data stewardship, privacy, access, and, security—in addition to government enforcement of Canadian and Ontario privacy laws and regulations
- **ALL PARTIES**, including Sidewalk Labs, collecting and/or using data in the physical environment of Quayside will be held to the same high standards of digital governance
- **INFORMATION ARCHITECTURE AND SERVICES** should be open, enabling and promoting innovation by the many, not the few

Key Goals: Sidewalk Toronto's Vision for Data Governance

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Data & Privacy: Our Proposed Approach

Precedent-setting proposal including robust governance, an open system, and protection of data

SIDEWALK LABS

Private entities should not control/own data collected in the public realm. All companies, including Sidewalk Labs should be subject to one set of rules.

Proposal to Waterfront Toronto on October 15th, 2018

- **Establishment of a Data Trust:** Sidewalk proposes the establishment of an independent Civic Data Trust, which would approve and control the collection of, manage access to, and potentially store data collected in the physical environment, known as "Urban Data."
- **Data Trust to Make Urban Data Freely and Publicly Available:** As a default, the Data Trust would make de-identified Urban Data freely and publicly accessible, eliminating the concept of data ownership. Specific approval by the Data Trust would be required for entities to collect Urban Data with personally identifying information (such as CCTV cameras) or Urban Data collected on a more proprietary basis.
- **Responsible Data Impact Assessments:** Responsible Data Impact Assessments (RDIAs) would be used to ensure Privacy By Design and adherence to Responsible Data Use Guidelines in every part of the project and all collection of Urban Data, whether by Sidewalk or other parties. RDIAs would be filed with the Data Trust before the collection and/or use of any Urban Data within the project geography by any entity.
- **RDIAs and Registry of Devices Maintained by the Data Trust:** RDIAs, along with a registry of devices collecting Urban Data, would be maintained and made publicly available by the Data Trust.
- **An Ecosystem of Technologies by Many Innovators:** Sidewalk anticipates providing specific pieces of critical digital infrastructure and specific, use-case-driven technologies to achieve quality-of-life goals. All technologies provided by Sidewalk will be based on open standards, making it easy for the lion's share of technology in the neighbourhood to be provided by others.
- **Data Always Handled in Accordance with Canadian Law:** To ensure that Canadian law and values are applied to data, Sidewalk Labs will use a toolbox of mechanisms, including contractual protections, technical protections, and edge computing, where data is processed on-device and not transferred to a central server. Sidewalk does not propose a data localization requirement specific to Quayside.

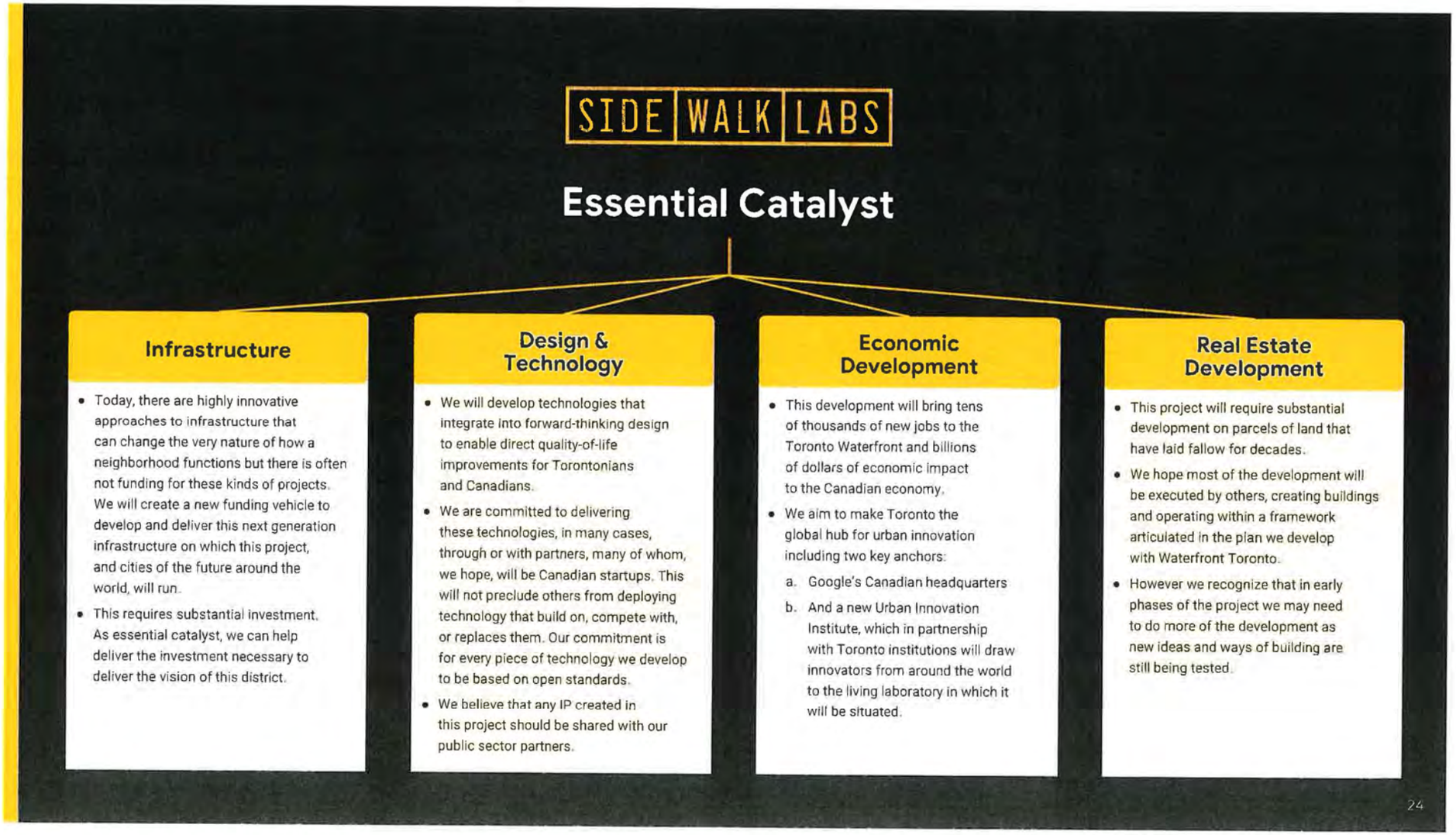
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Essential Catalyst

Sidewalk Labs envisions our role as that of an Essential Catalyst.

We will bring in partners from across sectors to design and build a neighbourhood that would currently not be possible. We can test and deploy ideas deemed too risky to be funded by the public or private sector alone, but ones where we think that with our partnerships and patient capital, we can make something great happen.

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SIDEWALK LABS

Revenue Model

Infrastructure Investment

- There is not a significant marketplace for funding next-generation infrastructure. We are working to create a vehicle, backed by Alphabet and eventually including Canadian partners, to do so where traditional players will not.
- This will enable investments in things like energy and water systems, freight delivery, utility channels, and more. We expect to make a reasonable return from financing this infrastructure.

Technology Products & Investments

- We intend to deploy a series of new technologies. The costs of research and development may or may not be recouped in the Toronto project, but we would expect to sell into other markets.
- The upside that is created by technology products that would not have come to be if it weren't for the opportunity we are given here should be shared fairly with our public partners.

Real Estate Development & Value Capture

- We intend to do limited real estate development, which would generate a return like other development projects.

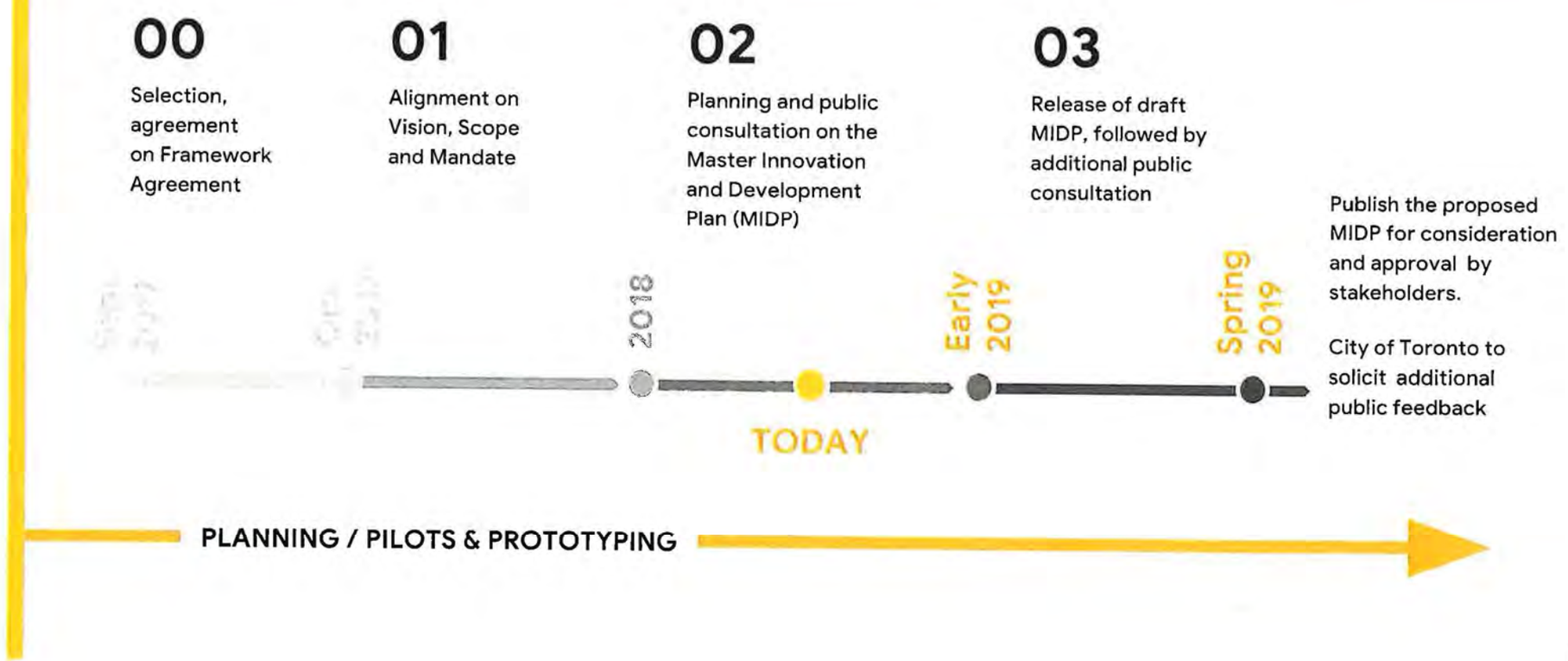
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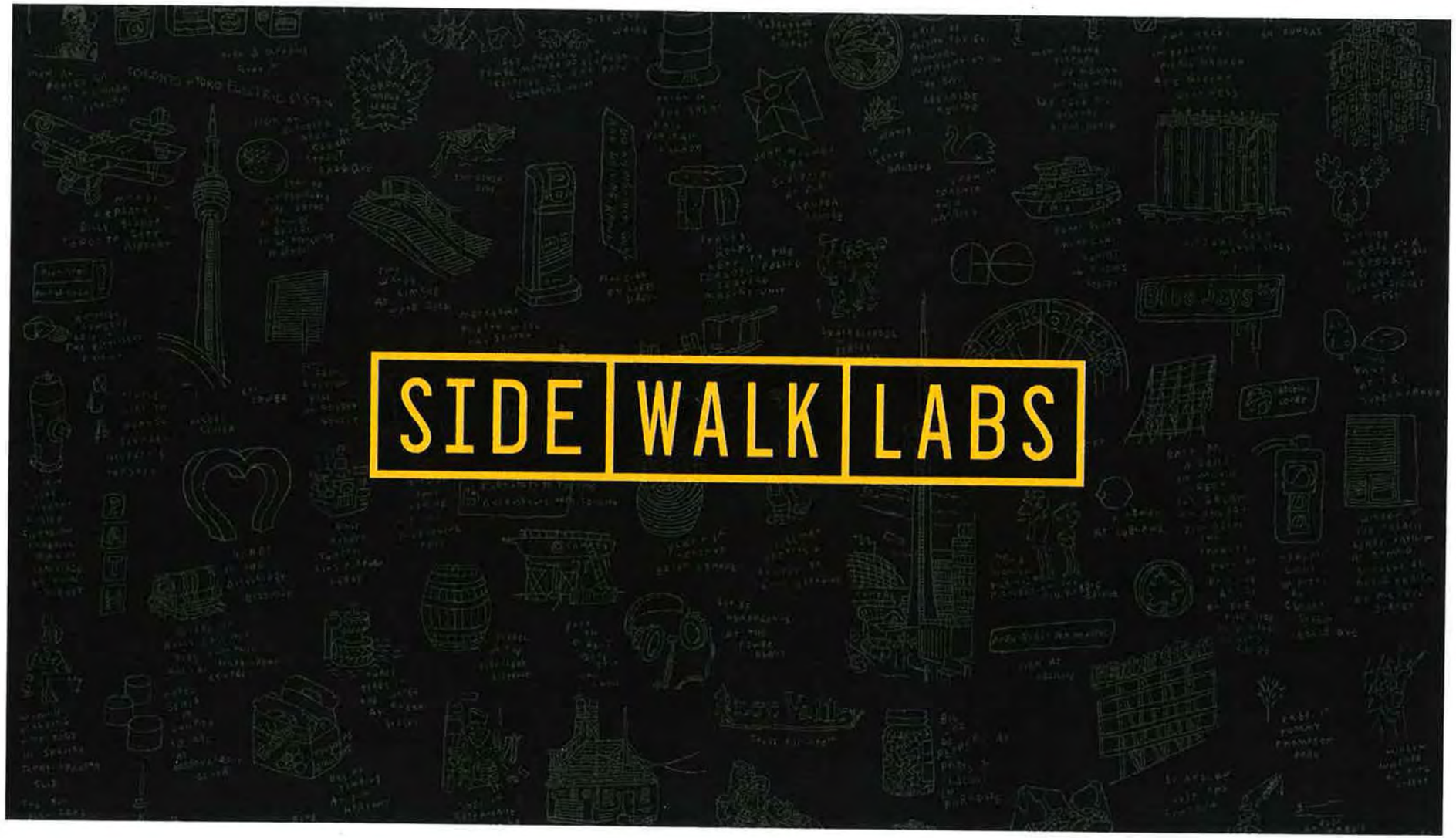
Master Innovation & Development Plan

Planned schedule and timing

SIDEWALK LABS



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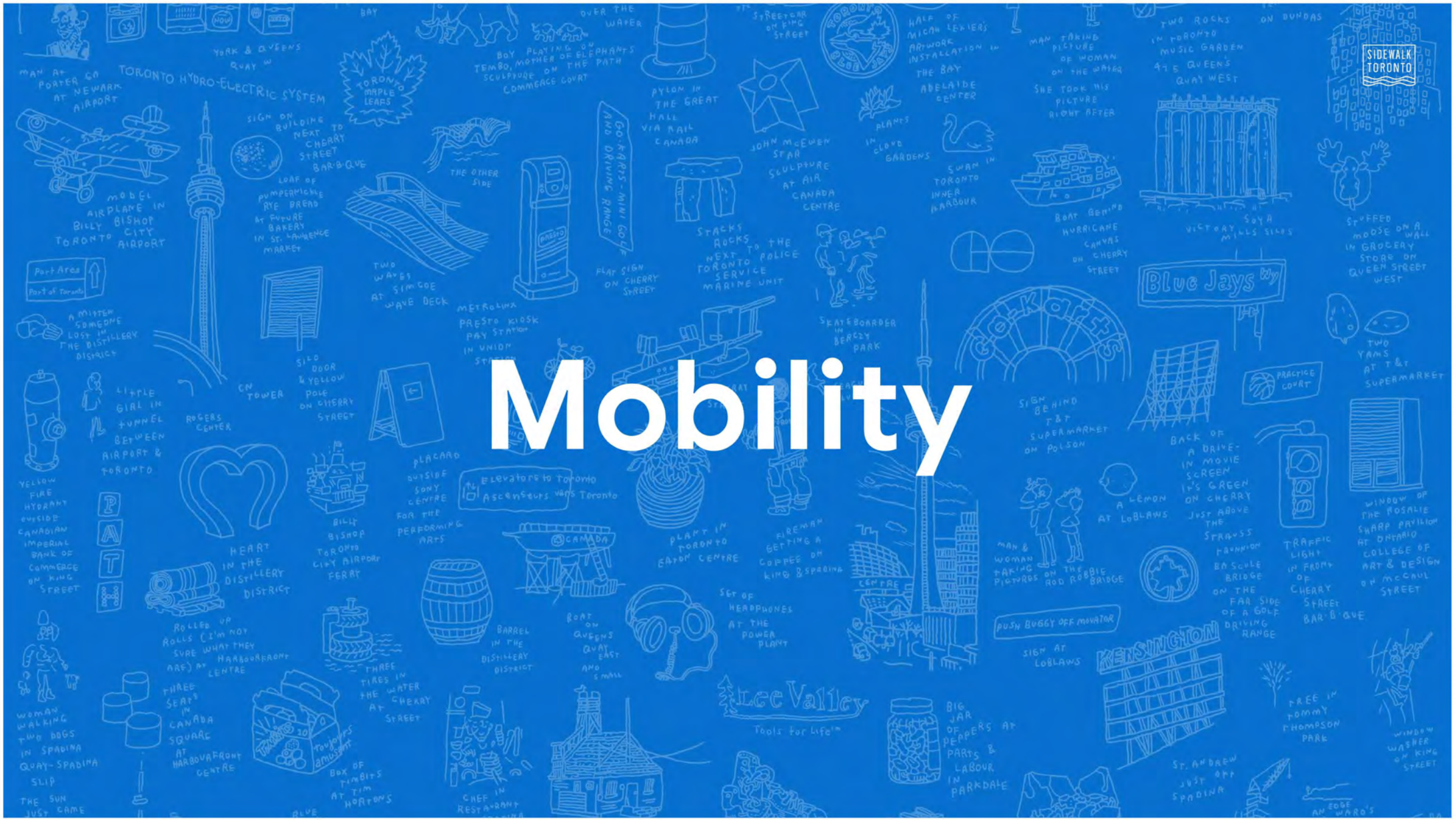
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QUAYSIDE MIDP BRIEFING FOR IGSC REPRESENTATIVES

Mobility: Rit Aggarwala
Sustainability: Charlotte Matthews

DECEMBER 10, 2018

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Quayside Transportation

01

Allow fast, reliable, comfortable trips to and from the neighbourhood via walking, cycling, and transit (i.e., non-auto modes).

02

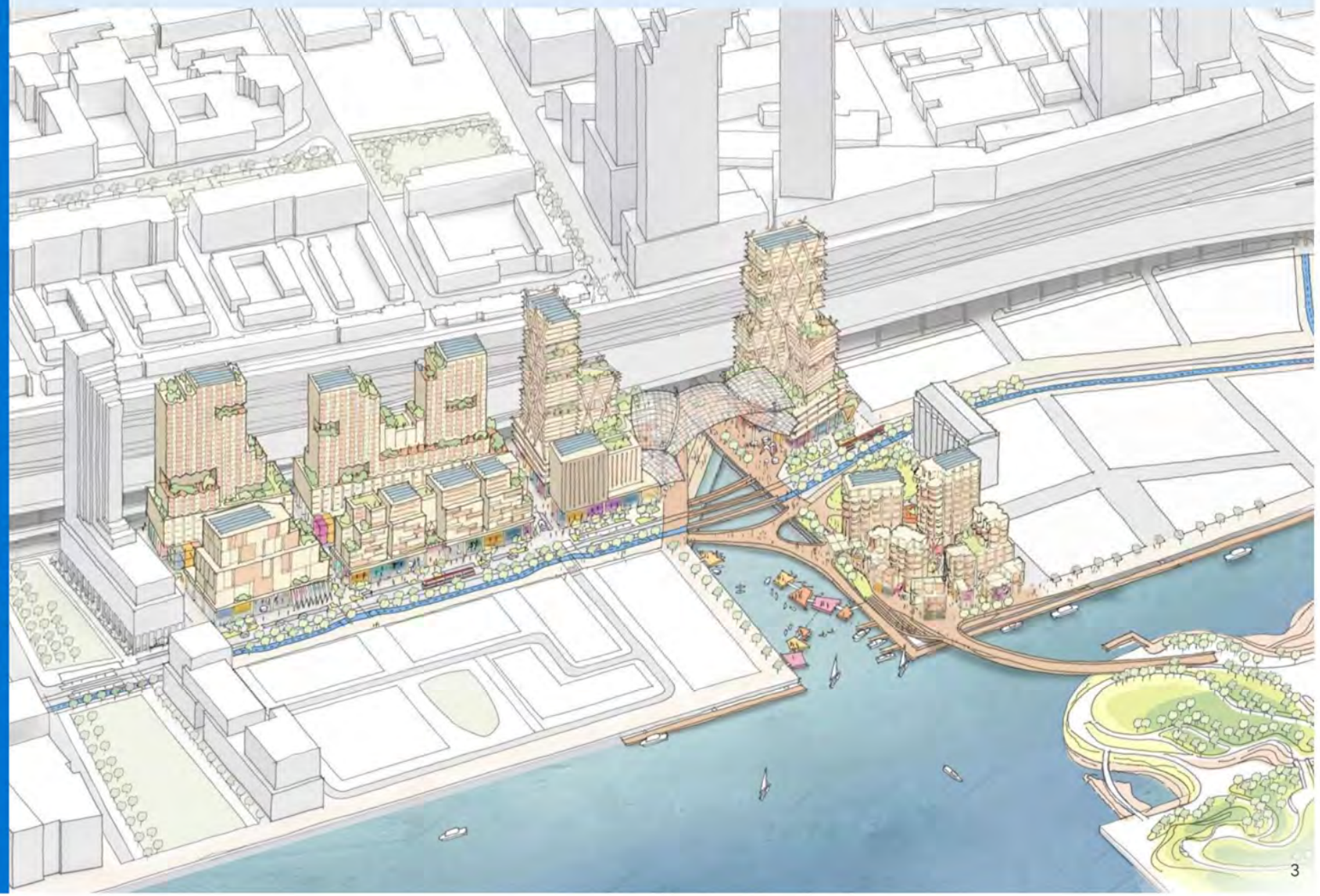
Over time, reclaim space for the public realm, while preserving access for private autos.

03

Provide for a future of new mobility options like AVs, mobility as a service.

The proposed transportation system in Quayside will...

SIDEWALK TORONTO



3

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Transit objectives set by WT

WT Criteria	MIDP Volume 2 Content
Improve connections to the transit network, including first/last mile challenges	1. Extend Waterfront LRT and bus 2. Improve comfort and safety of walking and cycling through speed-separated streets and priority treatments via traffic signals and bike path LEDs 3. Co-locate bikeshare, e-bike/e-scooter parking/charging with transit stops for mobility hubs (see Vol 1) 4. Note: have not identified any significant first/last mile challenges because LRT routes allow direct access to major nodes (Union Station, Broadview subway station, and future East Harbour Station and DRL stop at Sumach & Queen)

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EV objectives set by WT

WT Criteria	MIDP Volume 2 Content
Increase use of EVs to replace carbon-emitting vehicles	1. Provide Level 2 chargers at on-site parking garage at 15% of 500 spaces - install infrastructure to upgrade to 100%. Commit to EV charging at off-site parking facilities and discounted rates for EVs.

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AV objectives set by WT

WT Criteria	MIDP Volume 2 Content
Leverage potential future benefits of Autonomous Vehicles (AVs)	1. Increase ped/bike space since AVs need less space than human drivers to maneuver 2. Introduce speed separated streets and advanced traffic and curb management that carry vehicle traffic since AVs can be compelled to follow rules

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WT impact criteria

WT Criteria	MIDP Volume 2 Content
Reduce the cost, climate impact and convenience for the average user and transportation of goods	1. Pilot a smart container that ensures peace of mind for package security and user-input delivery locations 2. Provide a mobility package at ~$240/month that saves $9,900/yr compared to owning a private car (TTC alone costs $146/month) 3. Present mobility package services through a user-interface for Quayside - and provide integration ability for commonly used apps 4. Reduce the auto usage from 26% to 11% with mobility options (pending modeling confirmation) 5. Reduce the number of trucks by (~50%) per day with logistics hub (pending modeling confirmation) 6. GHG emissions reductions for mobility initiatives, including EV, will be shown on Page 8 chart (pending modeling results)

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Vision for the Mobility System

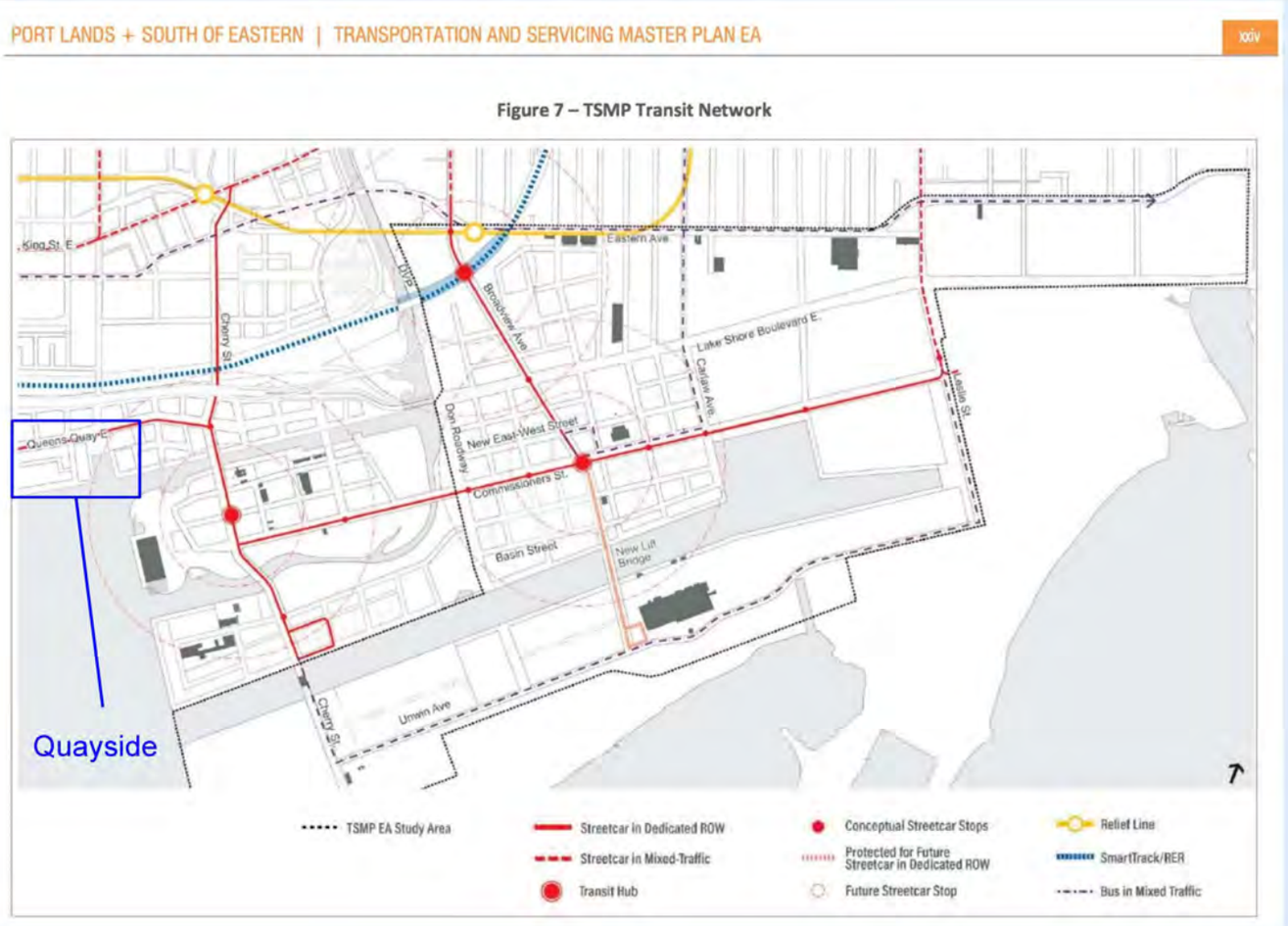
Transit Backbone	Knit the neighbourhood into into the City of Toronto's existing high-volume, backbone LRT system
Widespread Cycling and Walking	Make cycling and walking significant mode choices by improving comfort and range with materials, design, and data
Shared New Mobility Replaces Auto Ownership	Autonomous, electric, and connected vehicles replace private auto ownership
Freight Transit	Make moving freight (and outbound waste) simple and cheap for everyone, using smart containers and robots to eliminate the friction surrounding moving goods
An integrated transportation management district	Manage mobility for all users through a system that will optimize access, with the ability to manage parking and curbside drop off, transit and other mobility services as one package, and eventually road pricing on autonomous vehicles
Streets for People	Redesign urban streets for all users to make streets dynamic and to take full advantage of AV benefits

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Transit backbone: build the already-approved Eastern Waterfront LRT

In January 2018, City Council endorsed the Waterfront Transit Network Plan and directed staff to study options for the Union Station connection, targeted for completion in early 2019.

Sidewalk Labs agrees that this extension of the streetcar/LRT network is the best solution for connecting Quayside to the larger Toronto area.



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With the full-build LRT, transit connects Quayside to all Corners of Toronto & the GTA



Potential Transit Level of Service & Projected Travel Times

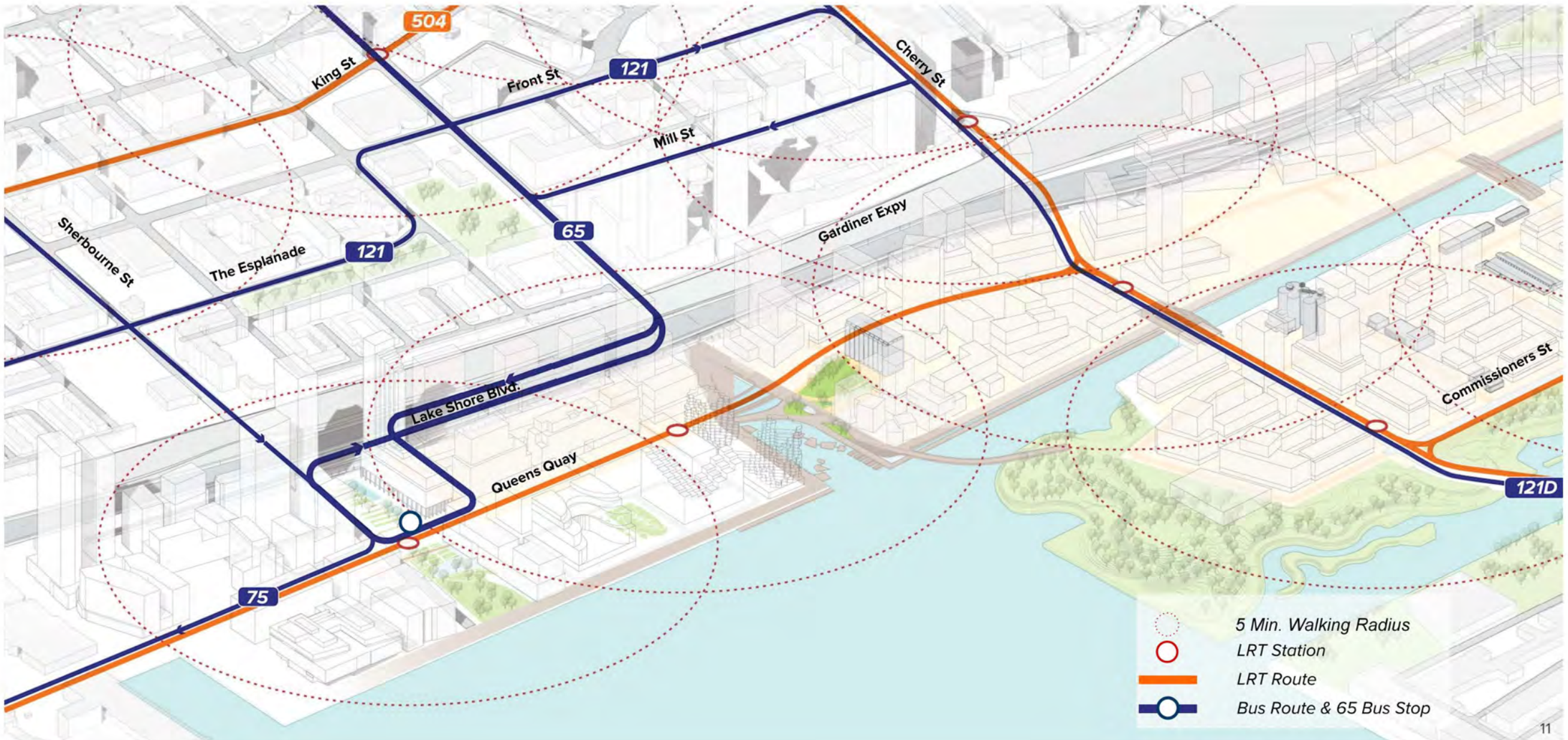
Travels Between	Frequency	Travel Time
Union Station ↔ Queens Quay & Parliament	509 LRT (12,6) vehicle / hour (peak, off-peak)	8 min.
East Harbour Station ↔ Queens Quay & Parliament	509 LRT (12,6) vehicle / hour (peak, off-peak)	10 min.
Broadview Station ↔ Queens Quay & Parliament	Broadview LRT (7.5,4) vehicle / hour (peak, off-peak)	20 min.



Mass transit expansions, as recommended by the Waterfront Transit Reset plan

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Transit: Potential Light Rail and Bus Routes



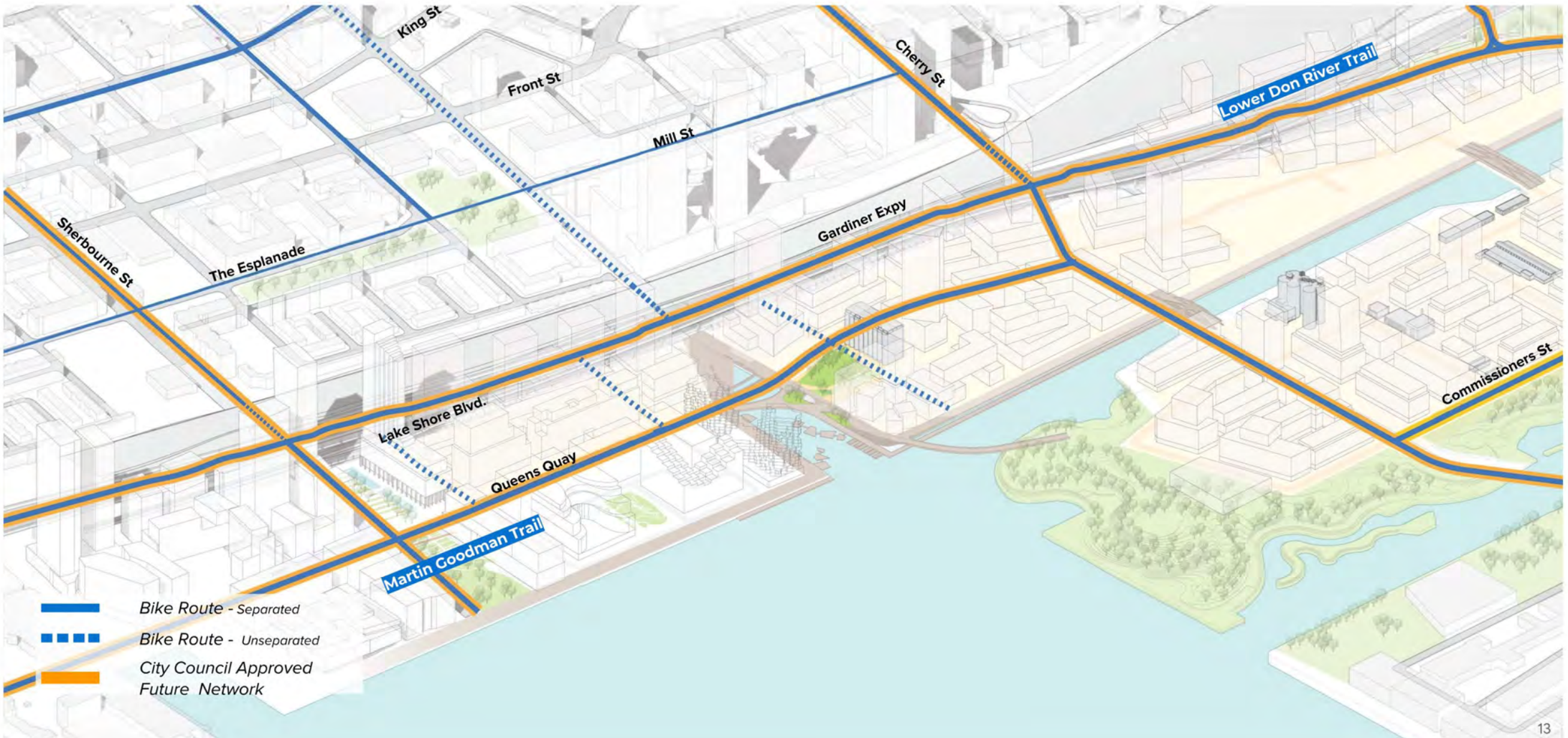
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Walking & Cycling: **Pedestrian Circulation**



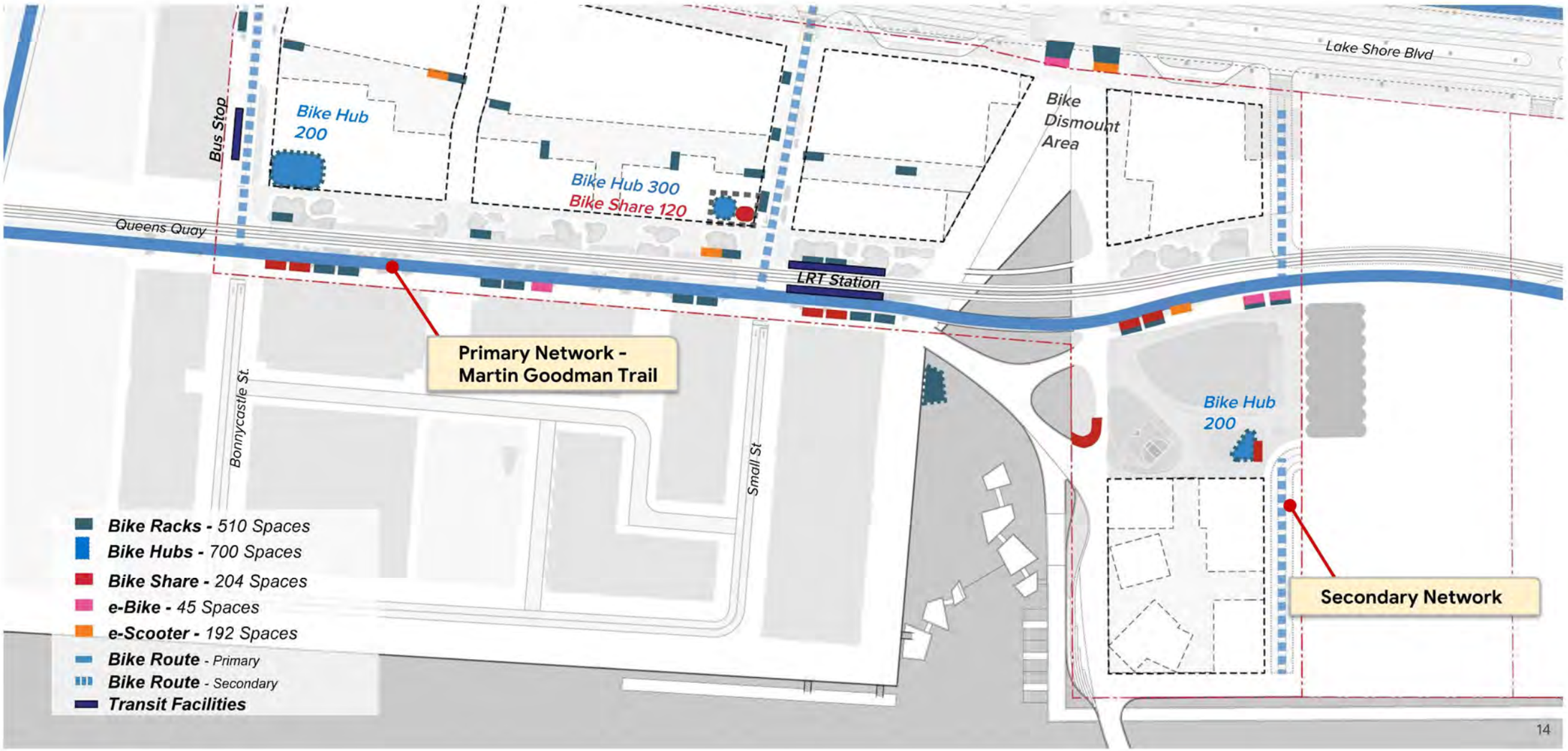
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Walking & Cycling: **The Bike Network**



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Walking & Cycling: **Bike Paths, Parking, and Sharing**



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Automobiles: Legacy vs. Autonomous Vehicles

LEGACY VEHICLES...

are the sort of vehicles we're all familiar with. Most notably, they are driven by humans.

AUTONOMOUS VEHICLES...

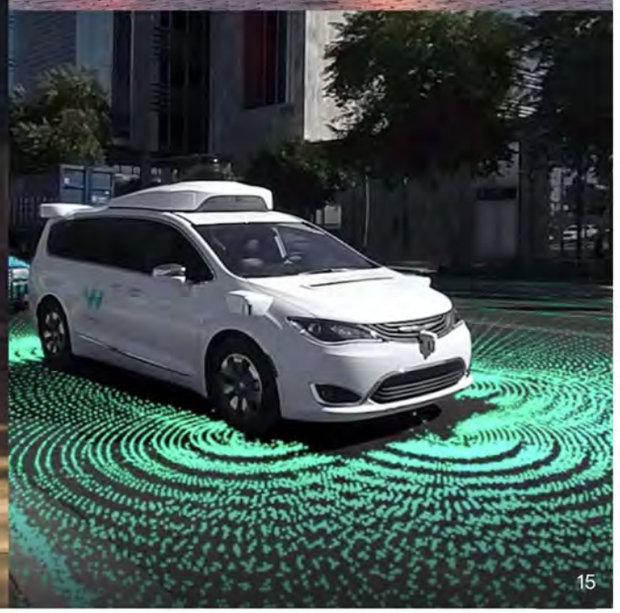
use radar, LIDAR, and cameras to constantly scan their environment, while a computer driver navigates the road, stopping, starting, accelerating and braking, and turning as necessary to get the car to its destination.

Some autonomous cars will still permit (or even require) human drivers to handle unusual conditions, but some will do without human drivers entirely.

Sidewalk Toronto anticipates a future of autonomous vehicles, in which cars can be counted on to take people on trips without risk of careless or distracted driving, reducing risk to passengers and other road users alike.

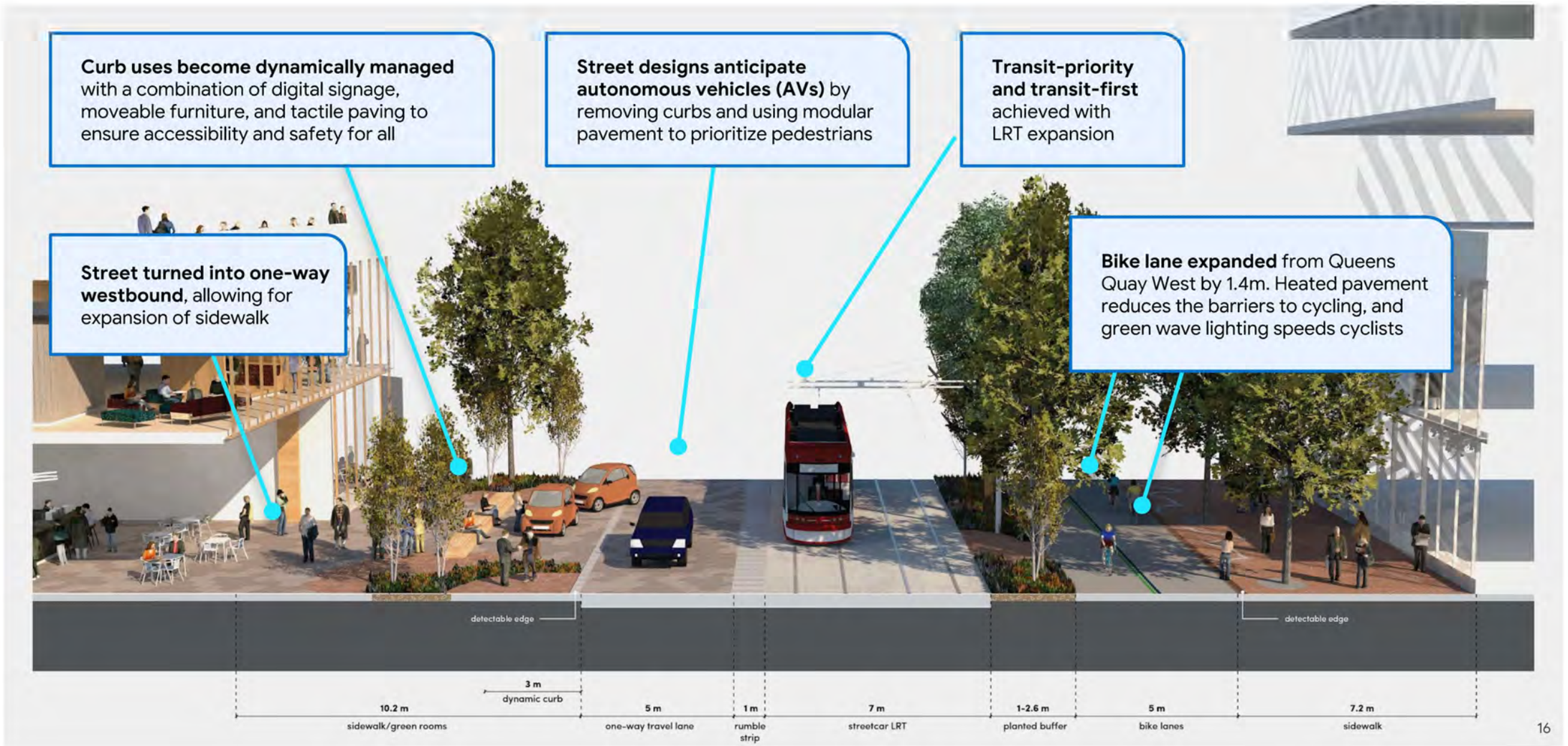






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2025 Design: Queens Quay to Adapt for Future as One-Way Interim Solution



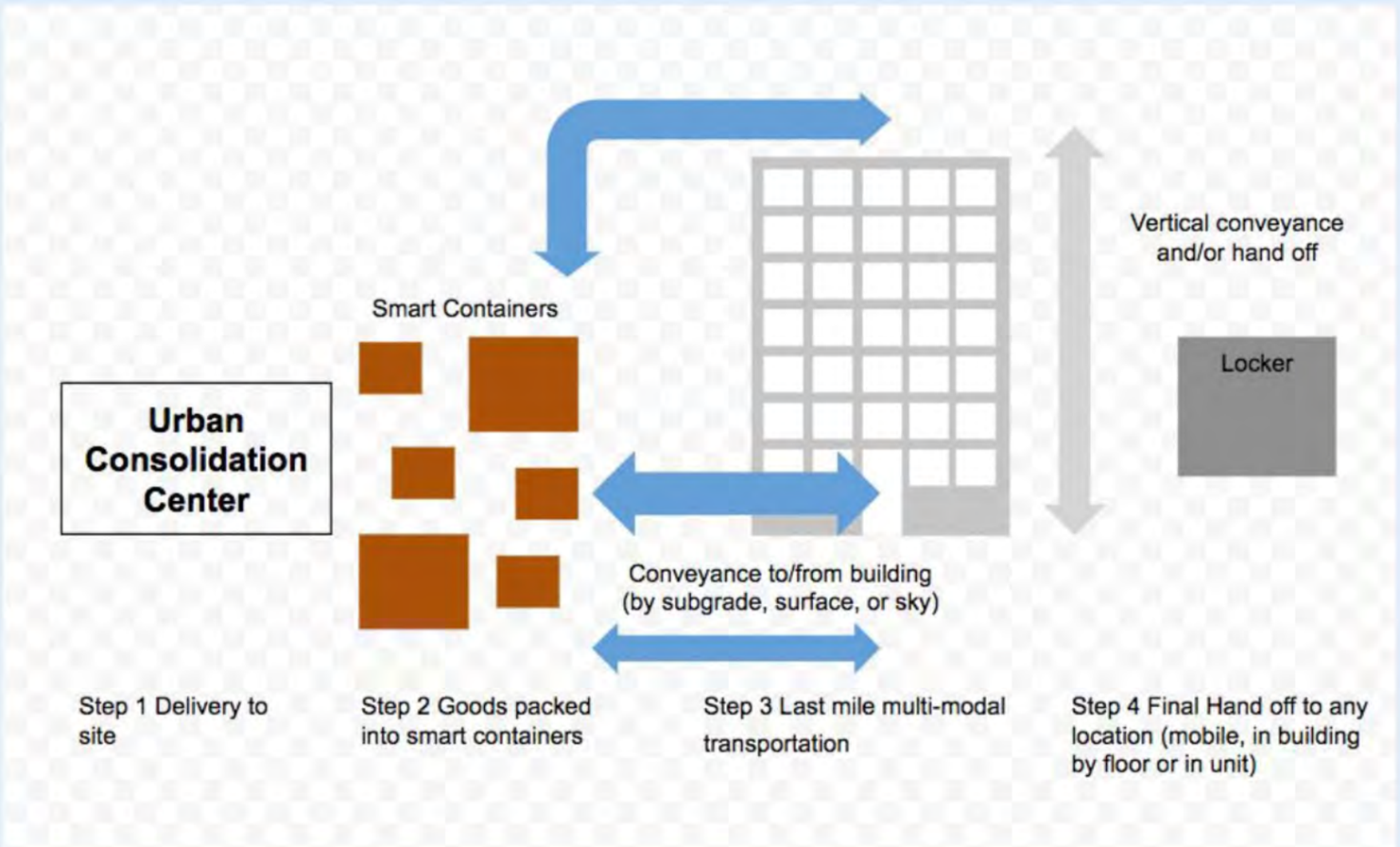
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Freight transit

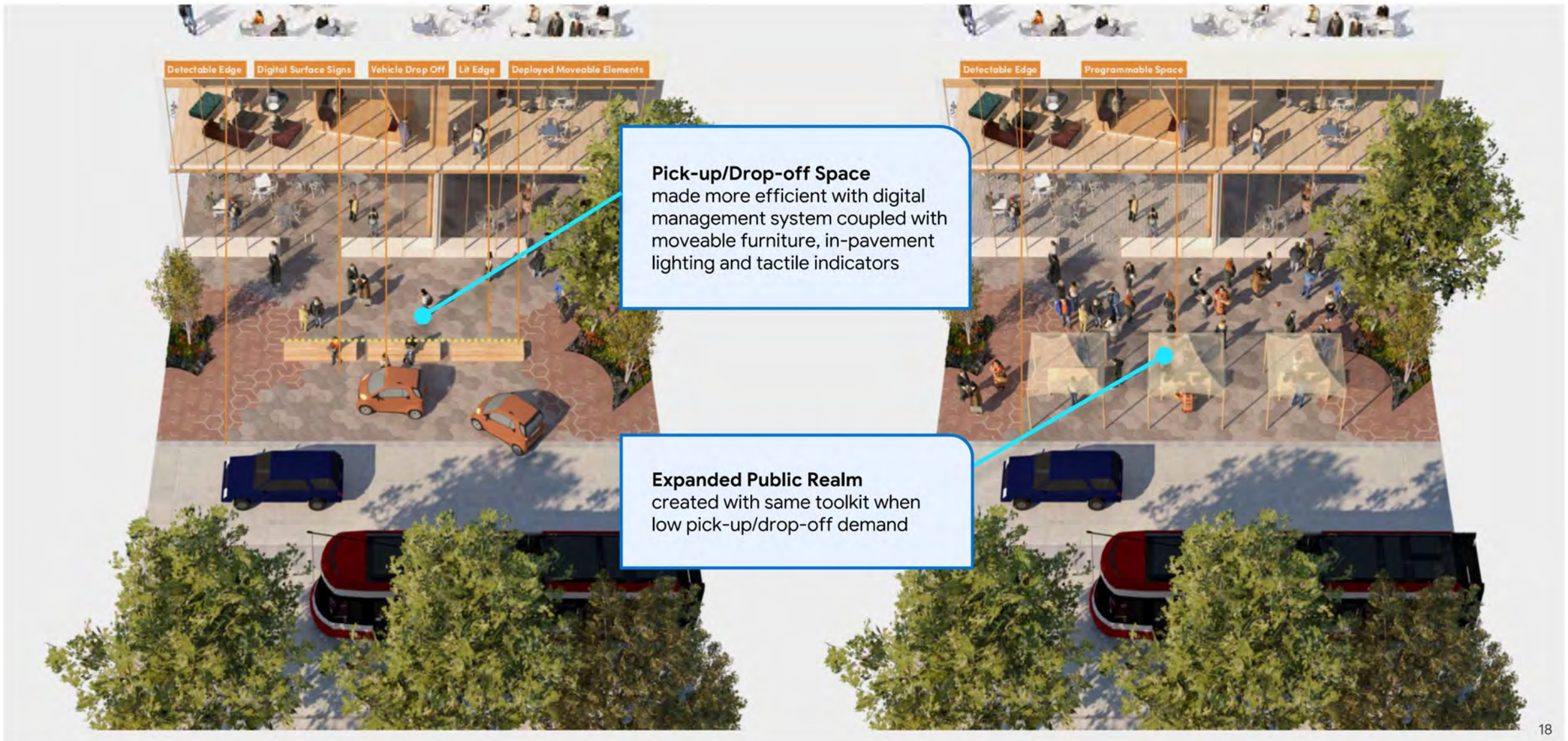
Quayside's freight system will make **moving goods (and outbound waste) efficient, simple and cheap** for everyone.

The core technology for this is multi-modal transportation, smart containers that enable tracking and chain-of-custody management, and receiving stations that guarantee no more 'failed first attempts'.



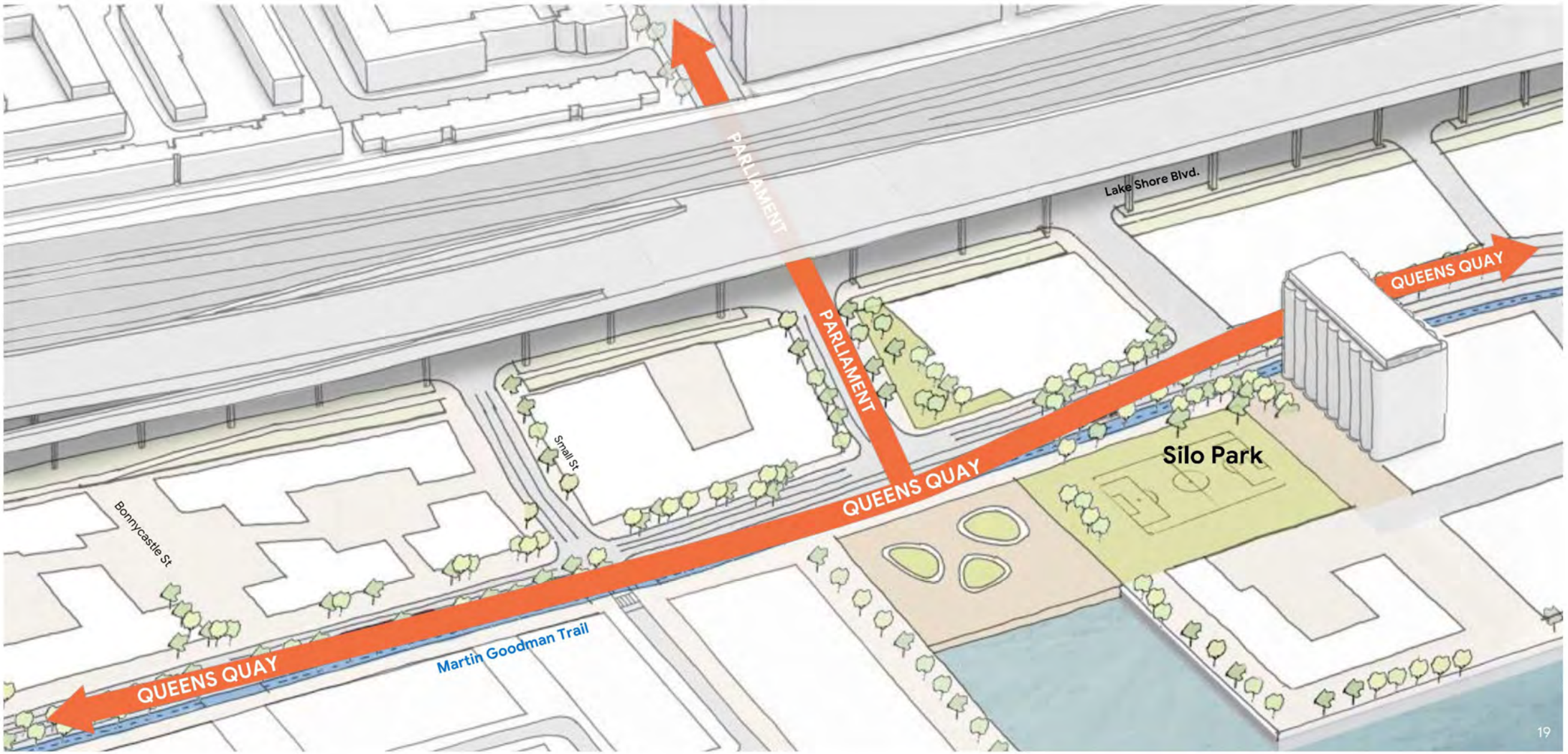
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Managing Transportation Demand: the **Dynamic Curb**



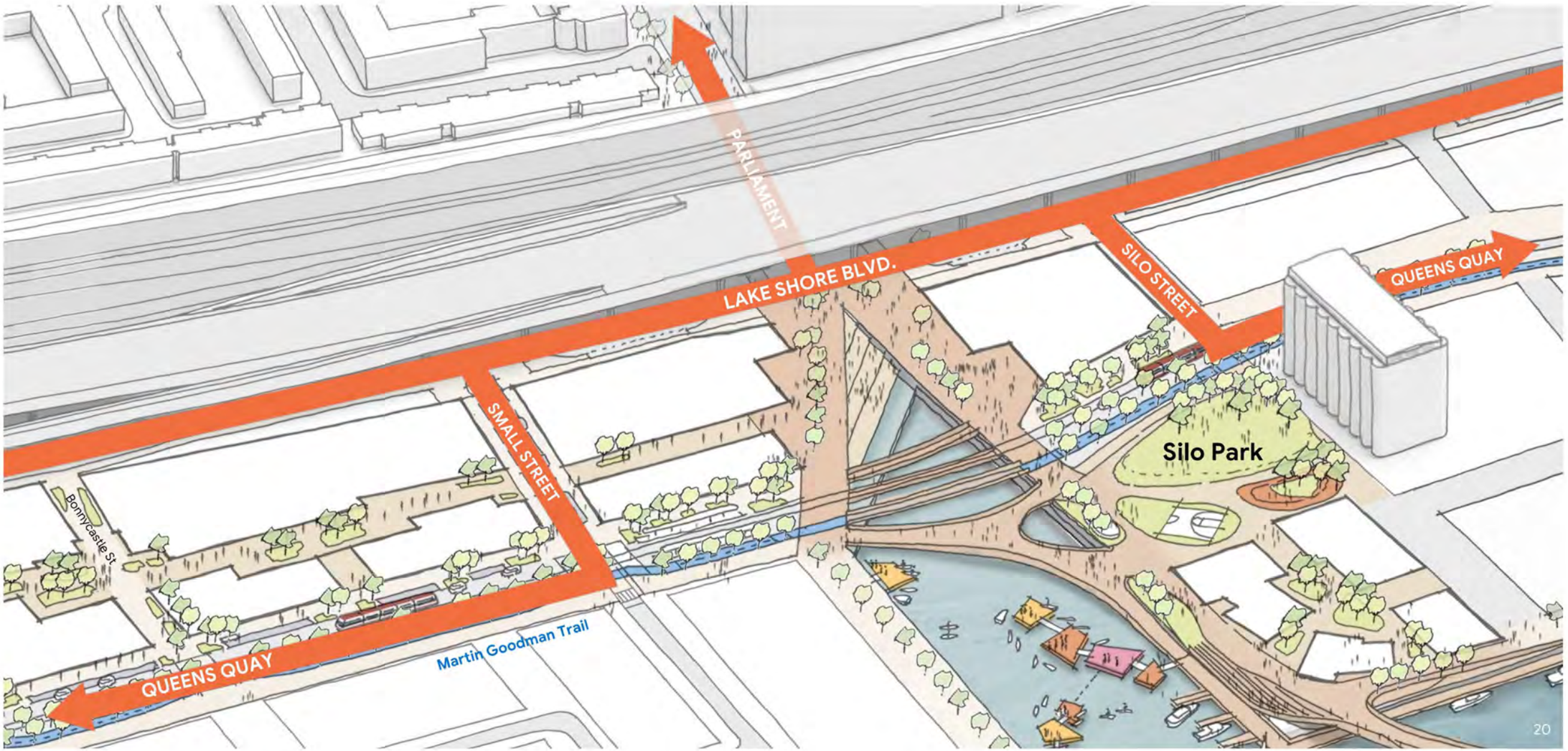
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Streets for People: Precinct Plan baseline



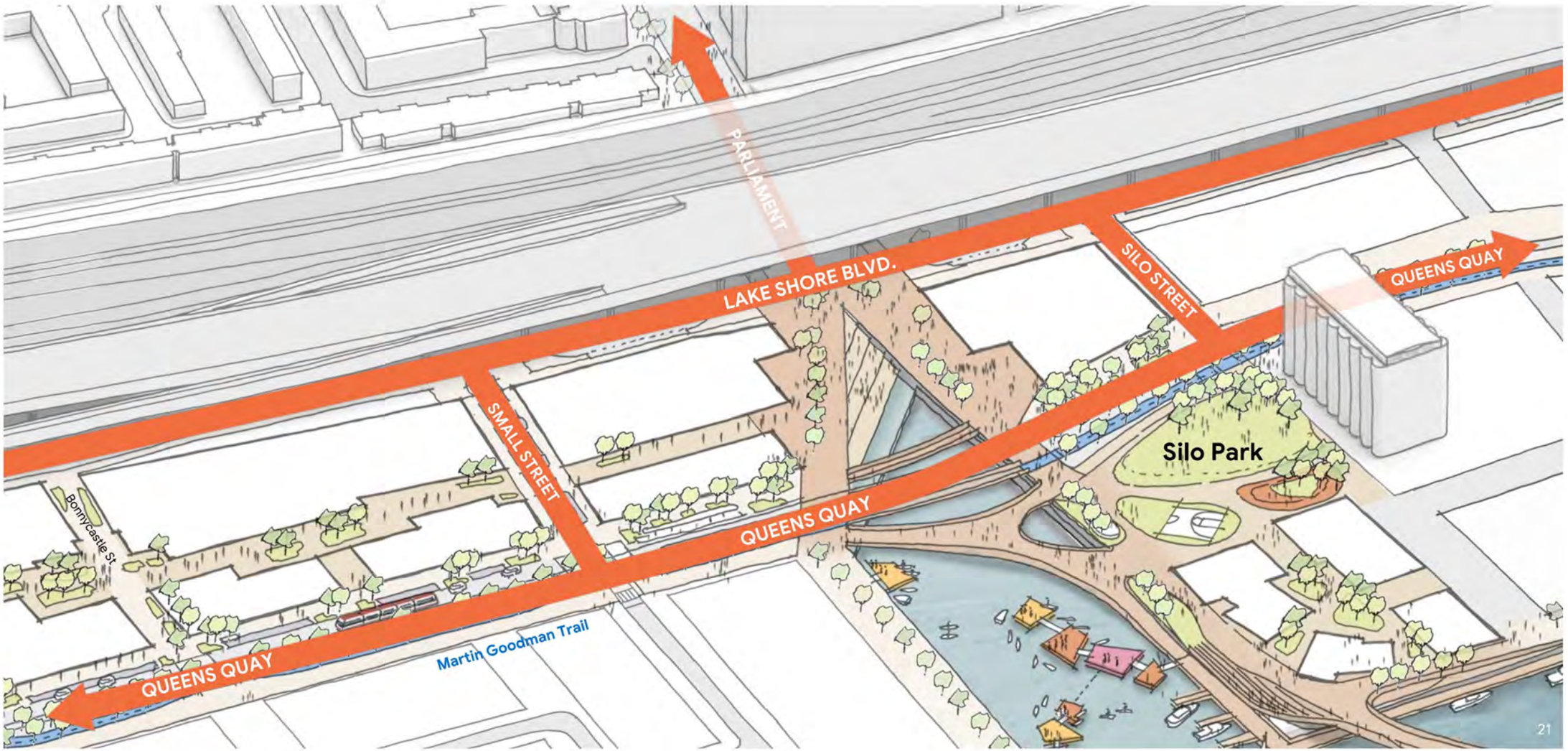
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Exploration 1 — Parliament Plaza: No Vehicles in Parliament Plaza



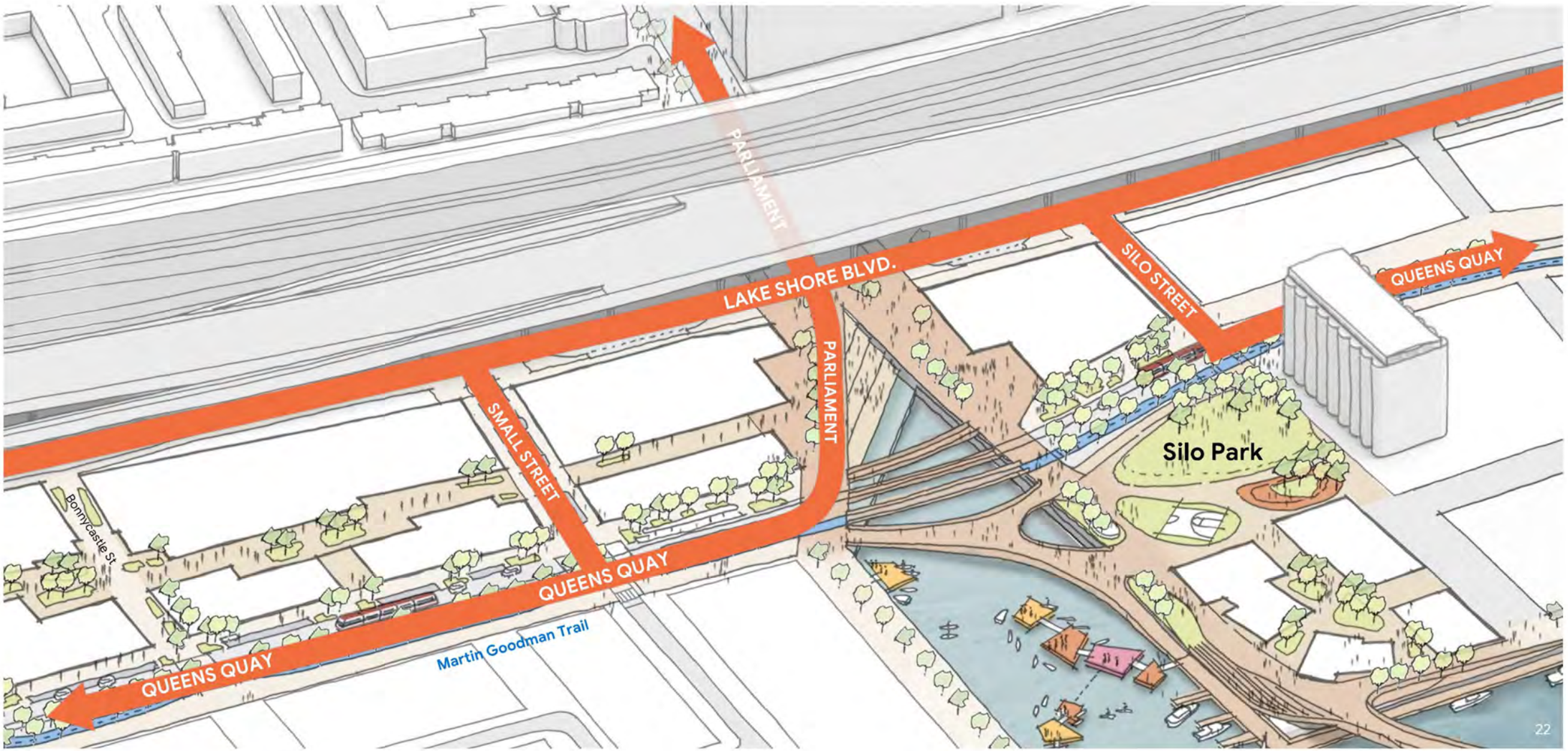
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Exploration 2 — Parliament Plaza: East ↔ West Vehicular Connection



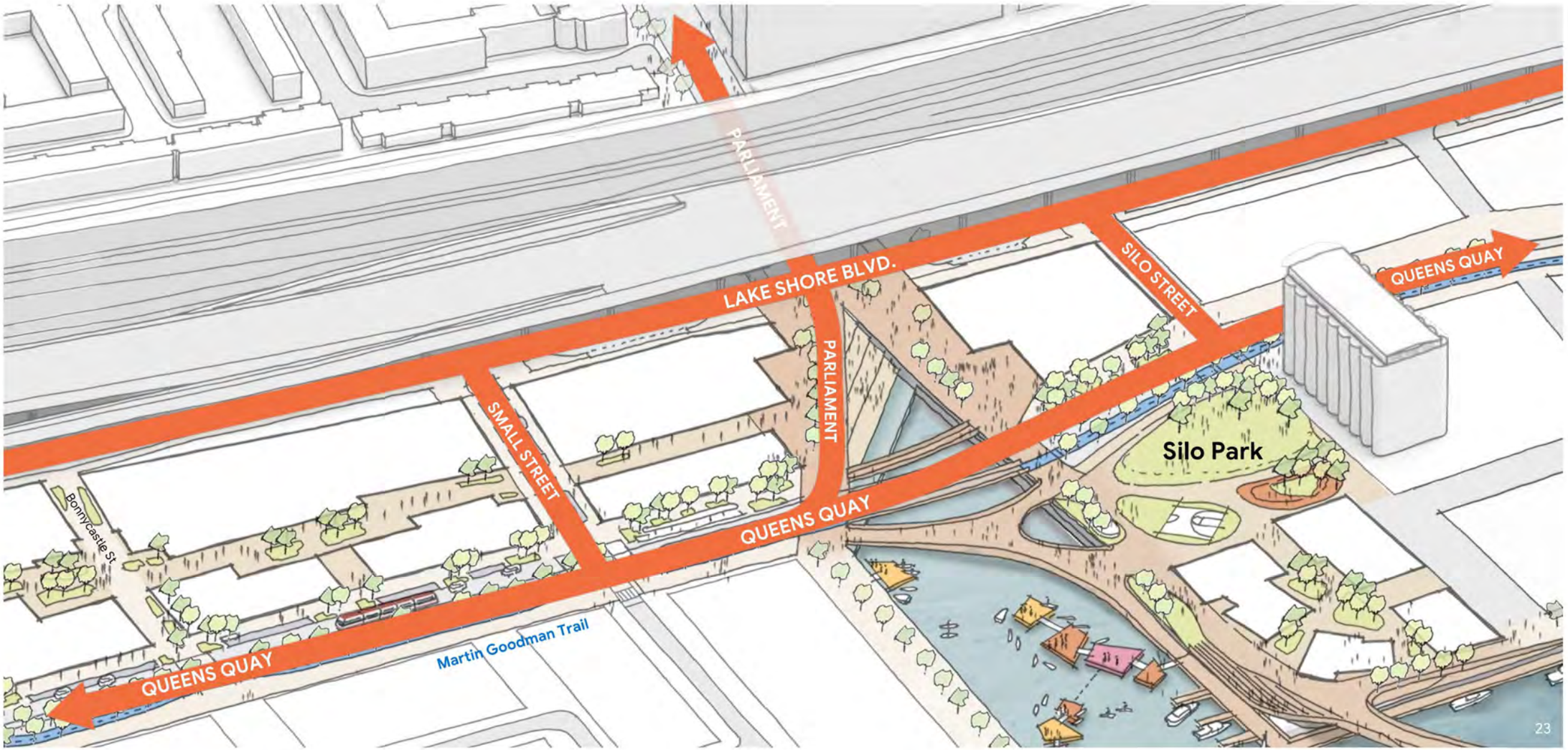
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Exploration 3 — Parliament Plaza: North ↕ South Vehicular Connection



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Exploration 4 — Parliament Plaza: N ↕ S and E ↔ W Vehicular Connections



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Sidewalk Toronto: Our Vision for Sustainability

A new standard of sustainability that builds on Waterfront Toronto and government leadership to create **a blueprint for climate-positive communities**.

We are creating a **fossil-fuel free, resilient neighbourhood** with **sustainable material use** and an **ecologically-enriched public realm.**

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Snapshot: Alignment with City of Toronto Policy Priorities

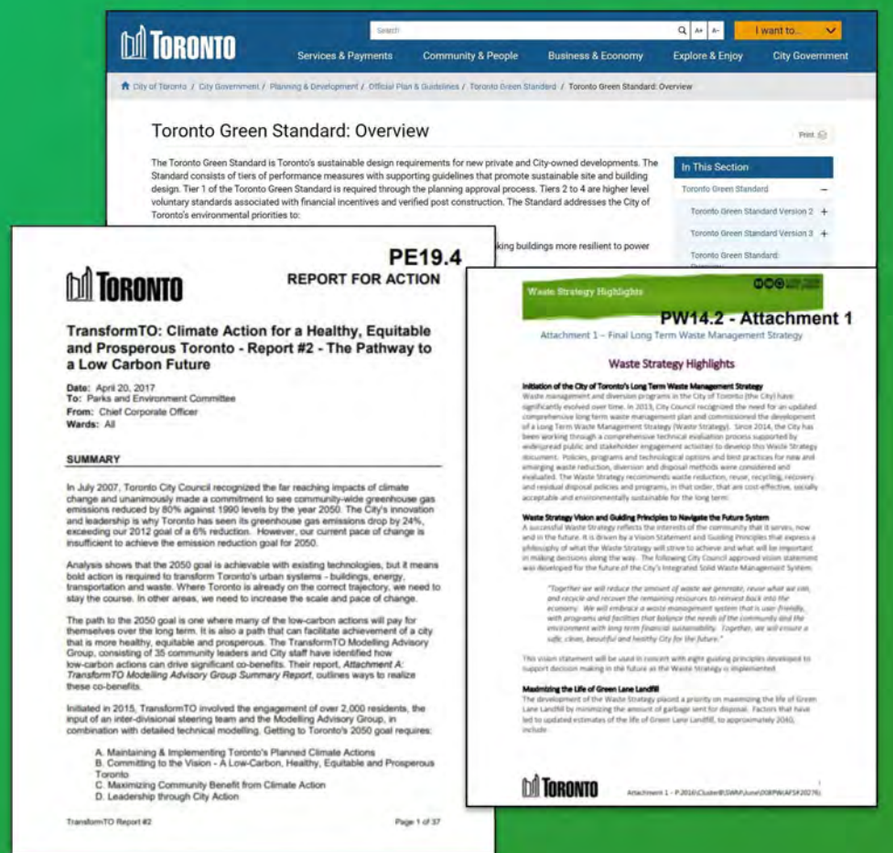
Toronto Green Standard Version 3

Toronto Green Streets Technical Guidelines

Long Term Waste Management Strategy

TransformTO

Wet Weather Flow Management Guidelines



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Snapshot: Alignment with Ontario Policy Plans

Ontario

Ontario's Environment Plan

- Protecting our Air, Lakes and Rivers
- Addressing Climate Change
- Reducing Litter and Waste
- Conserving Land and Greenspace

Ontario's Great Lakes Strategy

Ontario's Tall Wood Building Reference



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Snapshot: Alignment with Canada's Environmental Plan

Government of Canada

The Pan-Canadian Framework on Clean Growth and Climate change

Canada's Mid-Century Long-term Low-Greenhouse Gas Development Strategy

Low Carbon Economy Fund

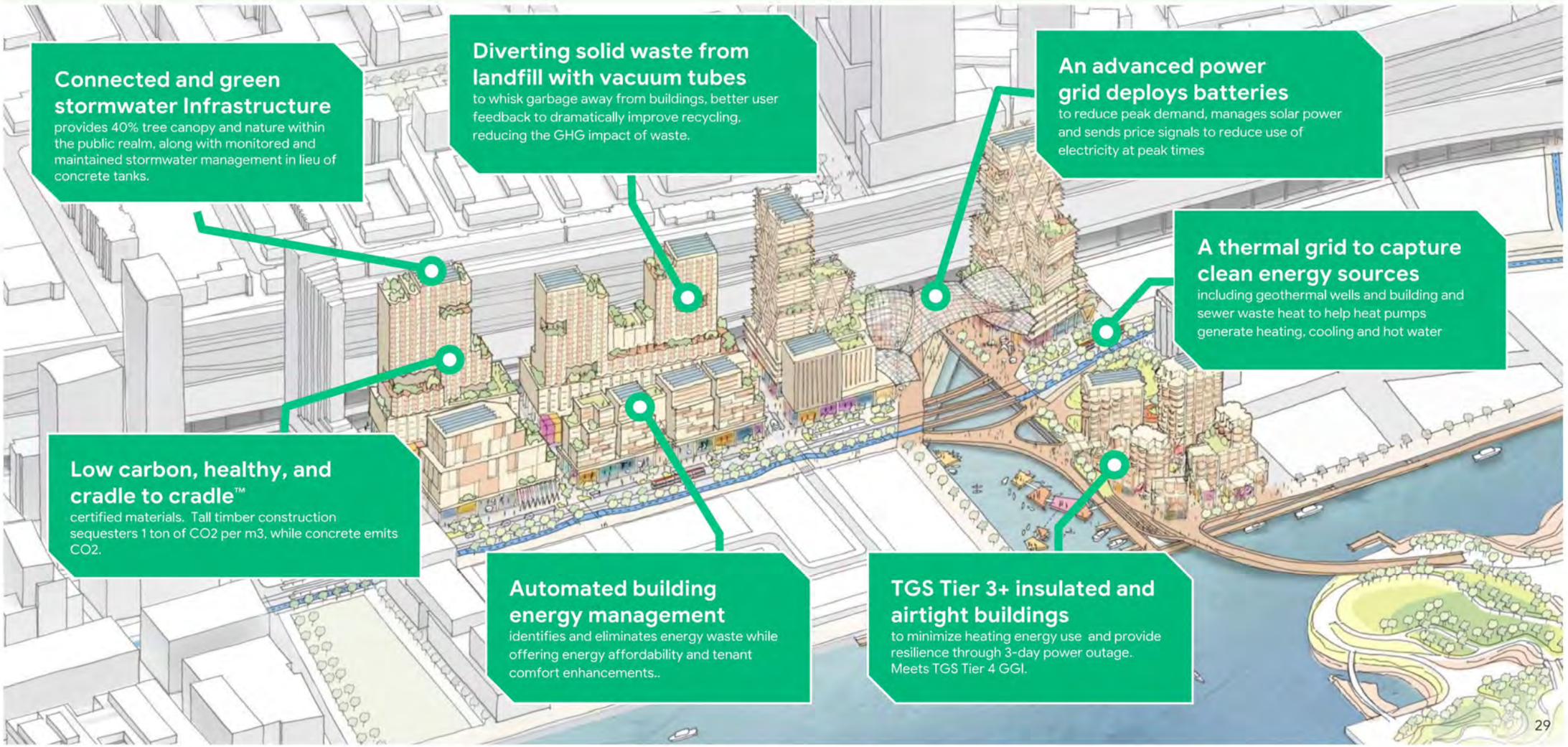
Expert Panel on Sustainable Finance



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Creating a Blueprint Climate Positive Neighbourhood

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Radical GHG Reduction Drives Toward Clean Energy

Using clean electricity for heating and hot water is a crucial step to achieving climate positive in Toronto, but it must also be affordable to be credible and scalable.

60%

Percentage of Toronto's GHG emissions from buildings, similar to other dense urban environments globally

GTHA GHG Inventory. TAF, 2017

87%

Percentage of building GHG emissions in Toronto are from the combustion of natural gas for heating and hot water

GTHA GHG Inventory. TAF, 2017

5x

Electricity prices are 5x as much as natural gas, but clean electricity is critical to GHG reductions

Published rates, Ontario. 2017

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Sidewalk Toronto's Approach to Affordable Electrification

No Natural Gas Infrastructure

Use heat pumps and fossil-fuel free energy harnessed by thermal grid in lieu of boilers and maximize solar potential on rooftops

Manage Electrical Demands

To maintain typically-sized infrastructure, develop and operate low load buildings, install battery storage and employ dynamic "time of use" utility pricing

Eliminate Energy Waste

Weed out the electricity use no one cares about or that actually degrades comfort, like overheating and air-conditioning

= Affordable Electrification

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Sidewalk Toronto's Approach to Affordable Electrification

Technologies & Infrastructure



Ontario power, distributed through Toronto Hydro, is 90% GHG-free; reminder is high-GHG at peak time



Rooftop solar PV yields 924 KW (9% of peak demand); available for community "subscription"



Energy storage to meet >40% of peak demand over 4 hours; owned by Toronto Hydro or other; available for community "subscription"



All-electric transportation including public transit; charging infrastructure for electric vehicles (EV)



Space and hot water heating with heat pumps tied into thermal grid with geothermal wells and sewer heat



TGS V3 Tier 3 TEUI and TEDI and Tier 4 GGI buildings. Designed to stay warm through 3-day power outage.



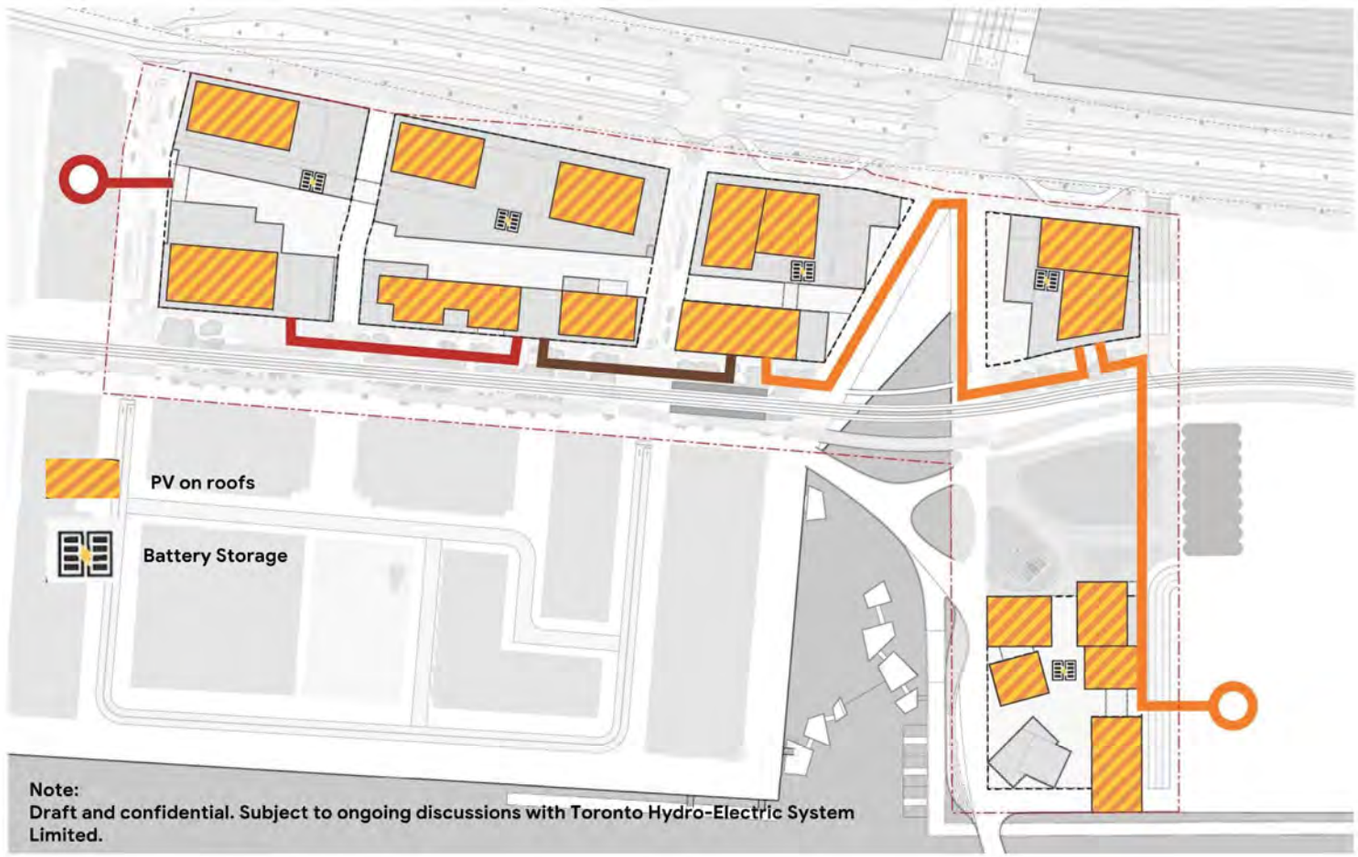
New dynamic rates to reward load-shifting, and use of renewable energy and battery storage



Conversion of TGS modeled targets into operational targets, plus automated equipment control

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Resilient Power Grid with Battery, Solar, and Microgrid Capabilities



Designed in partnership with Toronto Hydro to provide flexibility, resiliency and an opportunity to pilot new rates and load management technologies

Resiliency:
Bio-diesel fueled generators will backup critical loads.



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Water Source Heat Pumps Require Thermal Grid

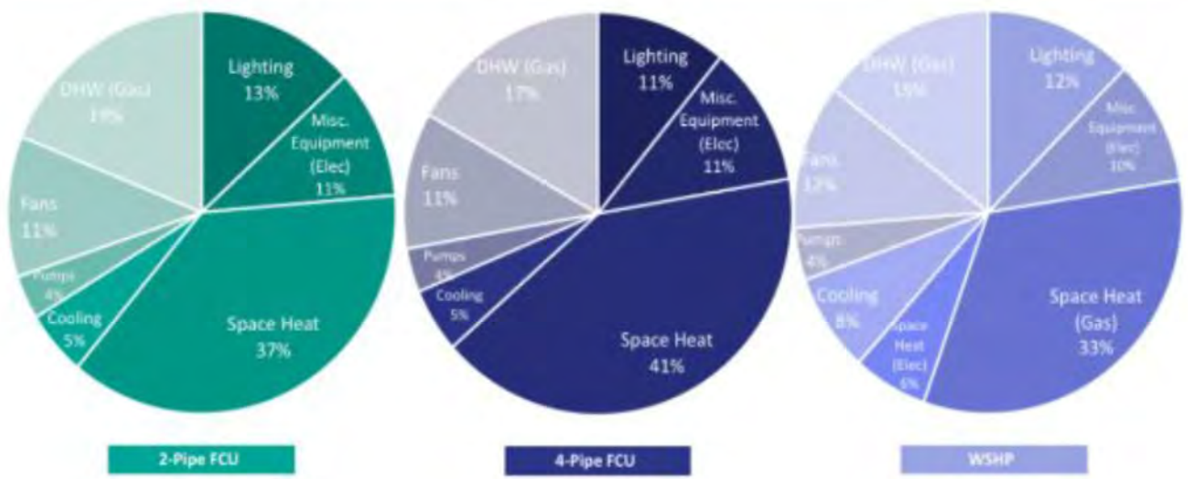


Sidewalk Labs commissioned a study of existing Multi-unit Residential Buildings (MURBs) to quantify and diagnose the "Performance Gap" - the difference between building energy use as modeled and actal.

Study of Toronto MURBs found that buildings with water source heat pumps use nearly as much gas as those with traditional hot water heating.

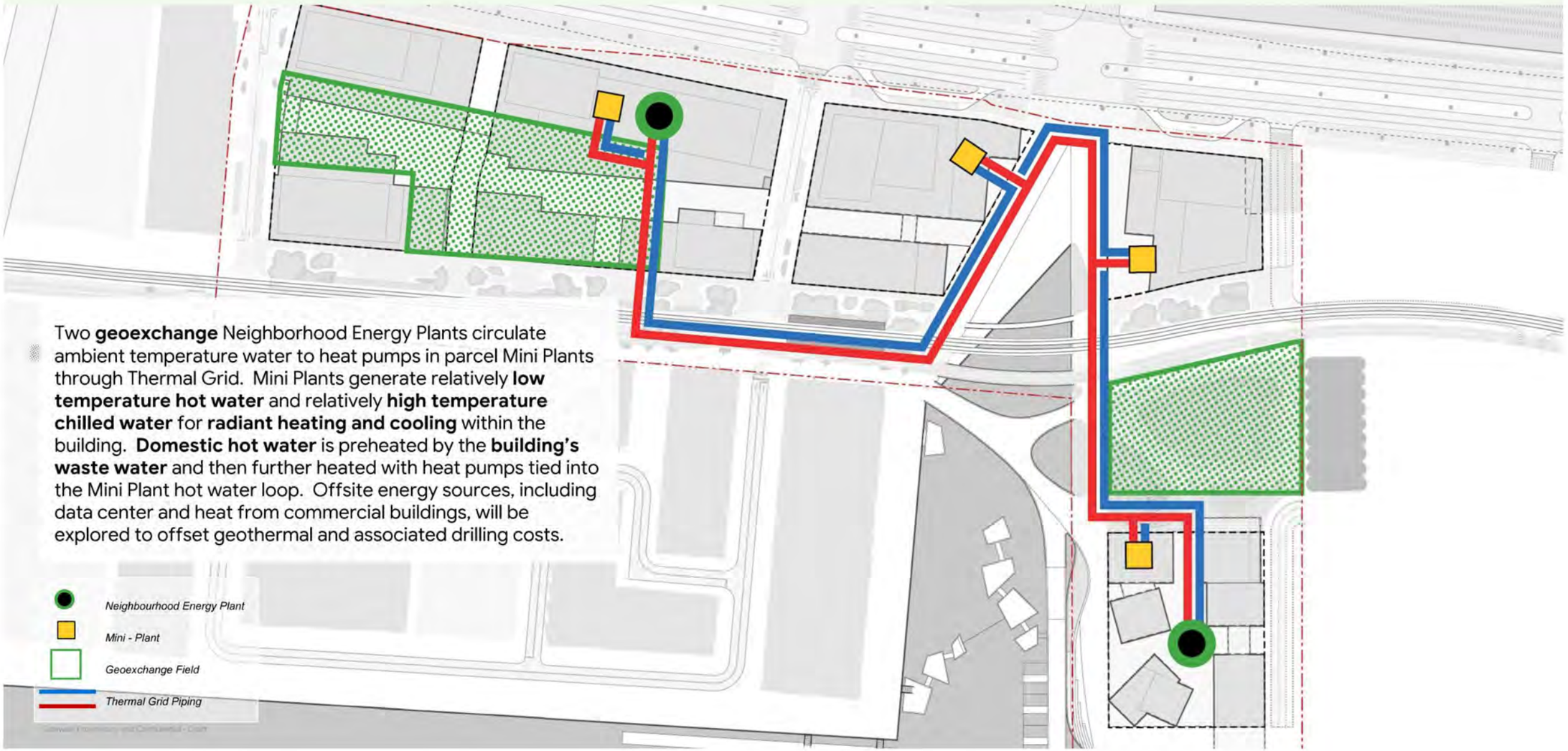
Learning: Heat pump loops require considerable tempering, most often provided by boiler fed hot water.

End use energy breakdown of Toronto MURBs, categorized by HVAC system type.



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Quayside Plan: Fossil Fuel Free Thermal Grid



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Scaling Fossil Fuel Free Thermal Grid Across Portlands

Beyond Quayside boundary, there are more cost effective energy sources to geothermal

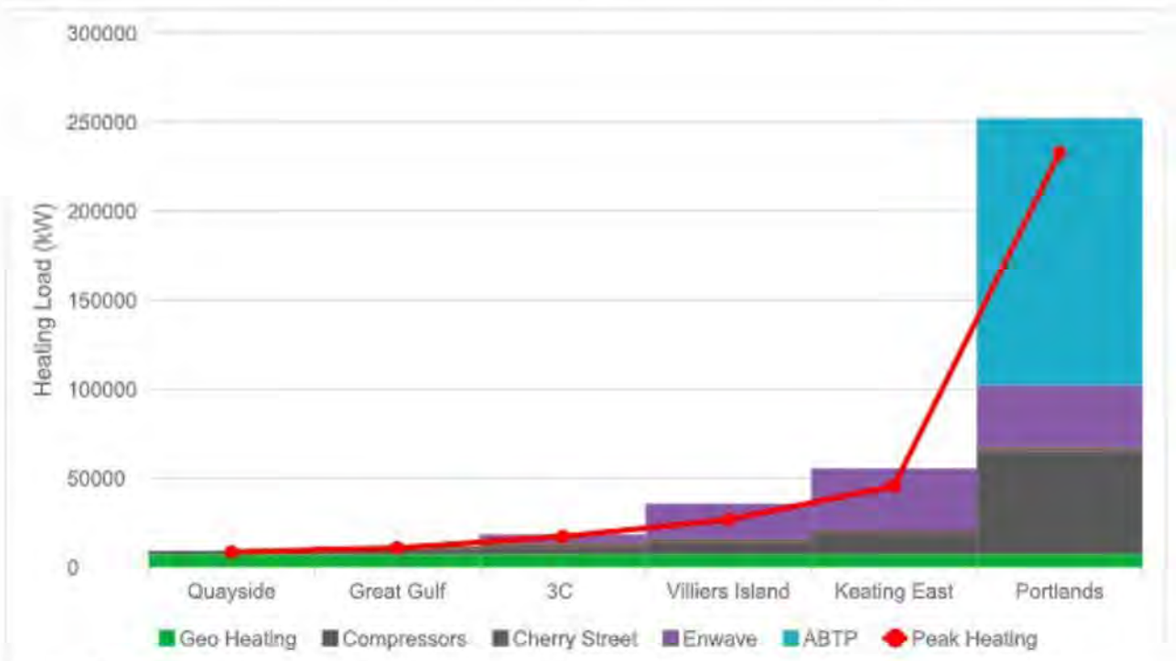
Parcel Mini Plant
Winter hot water supply: 45°C
Summer chilled water supply: 5°C

Geoexchange
Winter: -1°C
Summer: 35°C
Est. Construction Cost: $3,500/kW

Enwave Chilled Water Return
Winter: 10°C
Summer: 5°C
Est. Construction Cost: $1,000/kW

Sewage Heat Recovery
Winter: 15-18°C
Summer: 25°C
Est. Construction Cost: $2,000/kW

Costs are high level and based upon consultants' equivalent project experience; no engineering study conducted



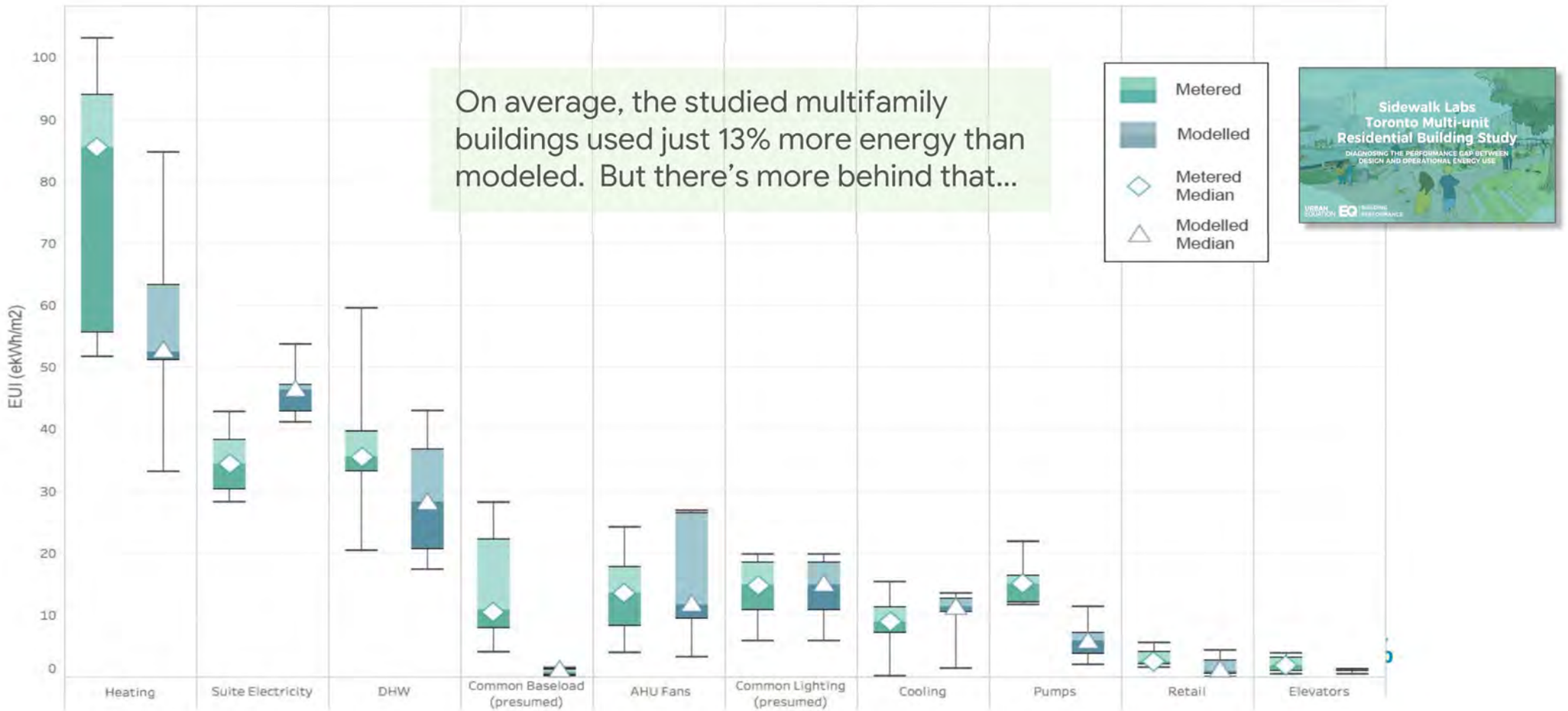
Heating Capacity vs Load

*Subject to detailed hydraulic analysis with Toronto Water.

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Modelled vs. Metered Energy Use of Recent Toronto Multifamily Projects



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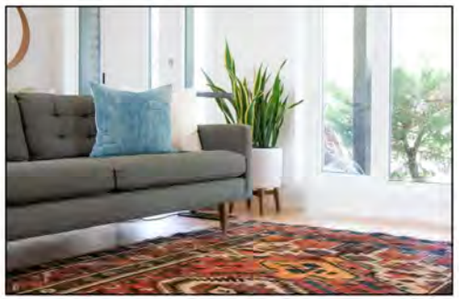
What Makes Reducing Building Energy Demands So Hard

Developers Demonstrate Code Compliance with Energy Models



Studies show that buildings generally use more energy than their code compliance models and green building ratings predict and energy use intensity (kWh/m2) varies widely between buildings, even those of a similar age and rating.

Tenants Do Not Respond to Utility Price Signals without Automation



Time-of-use utility rate pilots with automated control of thermostats, water heaters and appliances show significantly greater peak demand reductions and customer cost savings than those without.

Tenants are Not Actively Controlling the Energy Uses Under Their Control



Well over half of building energy use is attributable to tenant space temperature, hot water, lighting, and plug loads. No one in the office is actively controlling these uses with an eye to waste or cost.

So Much Equipment Is Operated According to a PreSet or Left On



Most equipment is run with a “set it and leave it” approach. This wastes energy and can even degrade comfort in the gap between the programmed setting and schedule and what tenants want and when they want it.

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A New Tool to Eliminate Energy Waste in the Office and Core Systems

More comfortable, responsive office spaces with improved energy efficiency and less effort to control building systems.

Fully Responsive Spaces



AB Office responds fully and fairly to tenant comfort requests

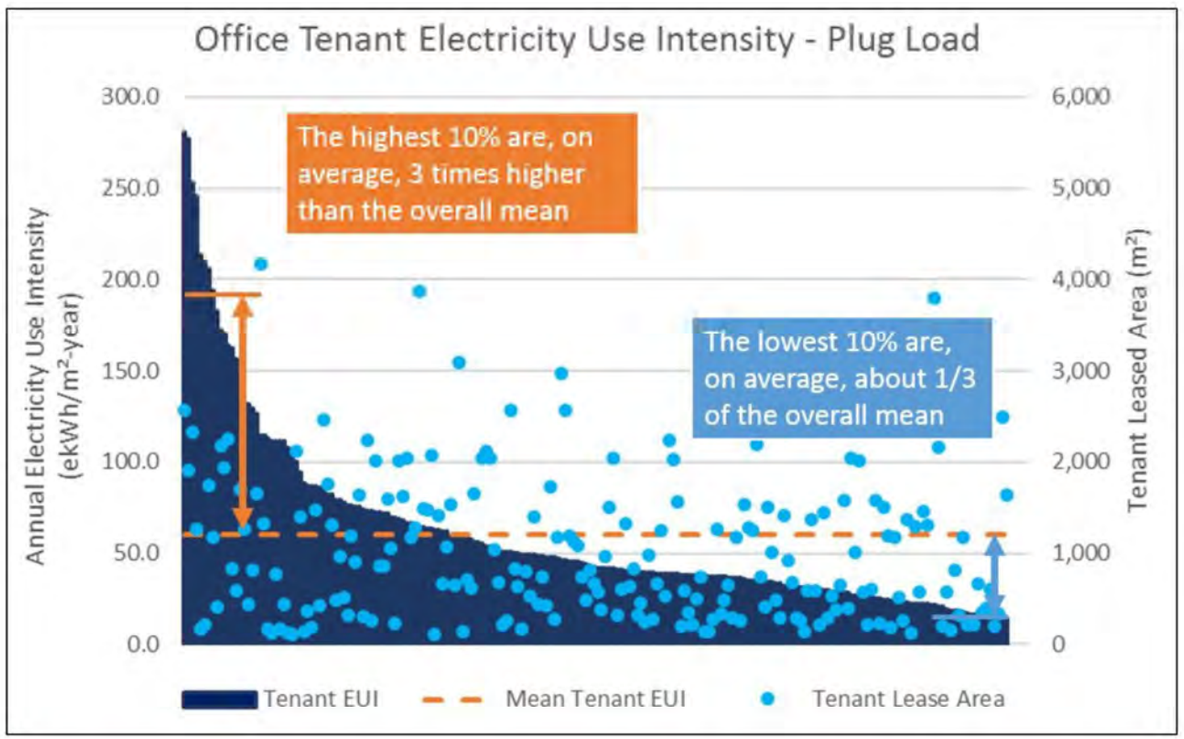
Operational Efficiencies



AB Core Systems handles a lot of the nuisance in managing a building.

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Delivering Low Load Buildings Must Extend into Operations



In-suite office electricity loads (plug loads and lighting) for about 75 sub-metered tenants in Toronto office buildings.

Sidewalk Labs commissioned a study of Commercial Office buildings in Toronto and Canada to understand the breadth of building and tenant energy use.

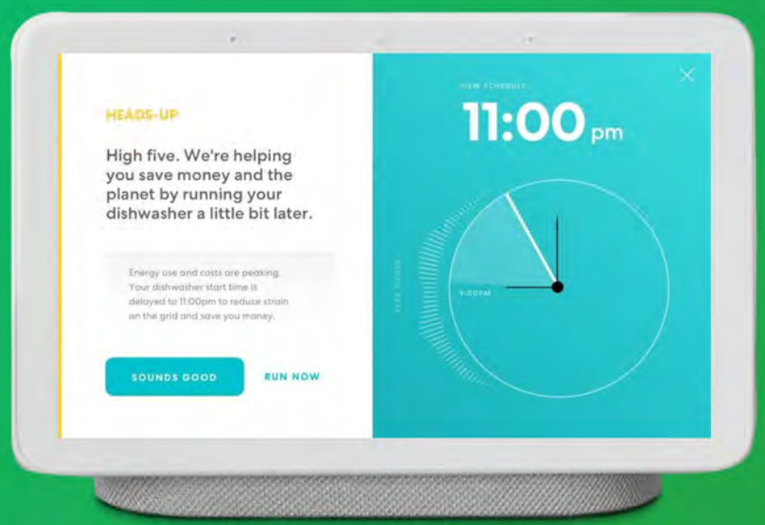


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New Solutions: Enabling Predictable Energy Bills for Residents



Smart Adjustments



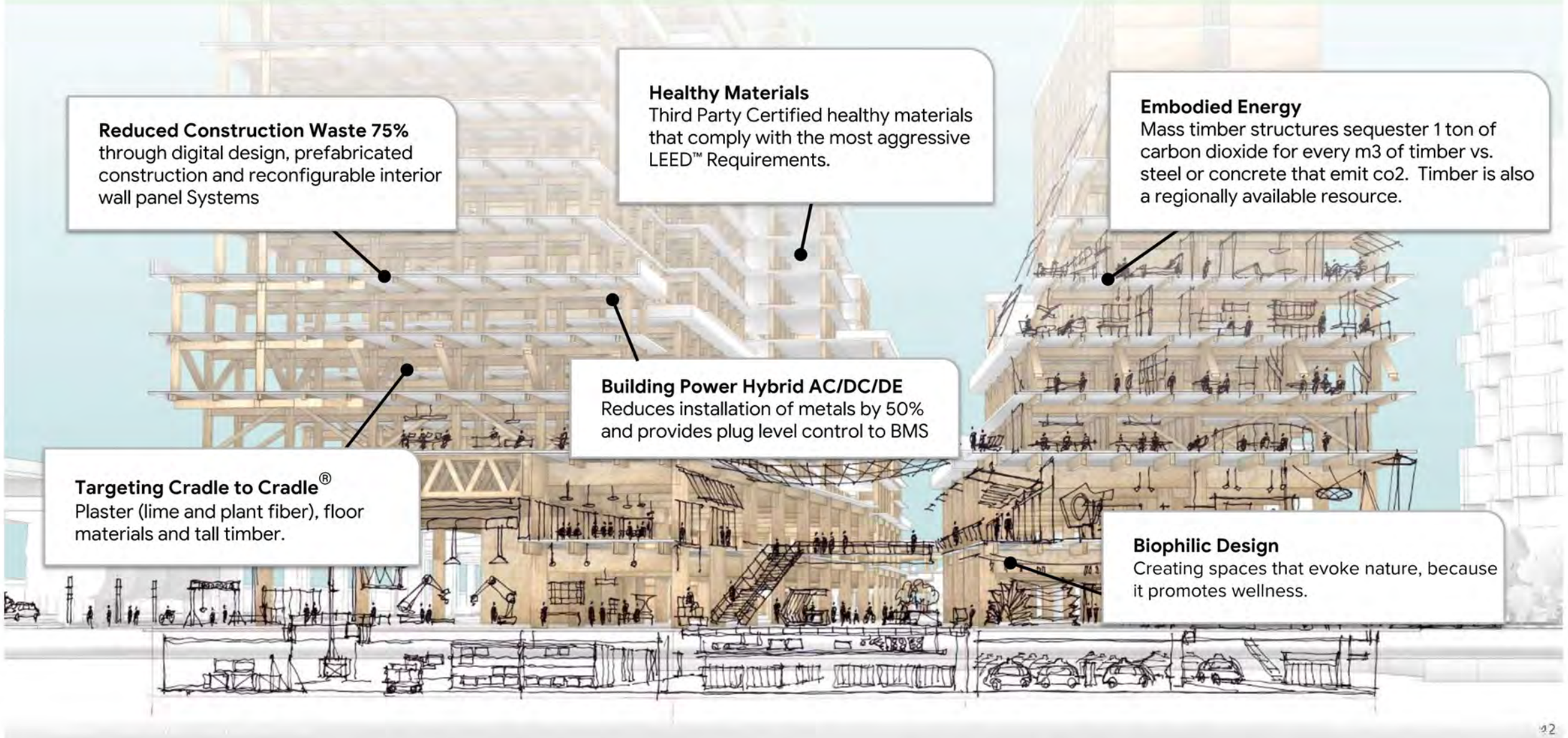
Helping residents manage their utility bill through automated responses to utility price signals and recommendations on solar PV and battery share purchases.

Scheduling activities throughout the home based on peak energy times to prevent unnecessary cost and greenhouse gas emissions.

Sidewalk Proprietary and Confidential - Draft

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Sustainable Buildings are About More Than Energy



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More Nature in Urban Settings and Stormwater Management

Reduce Heat Island Effect
Plants shade surfaces, reflect radiation, and release moisture to cool the urban environment

Enhance Biophilia
Natural landscapes improve health and well being in the built world while embracing the seasons

Reconnect with Lake Ontario
Land-Water Scapes direct the public to the waterfront with the natural flow of streams

Design for Tomorrow
Permeable modular paving melds the artistry of the street with sustainable water treatment



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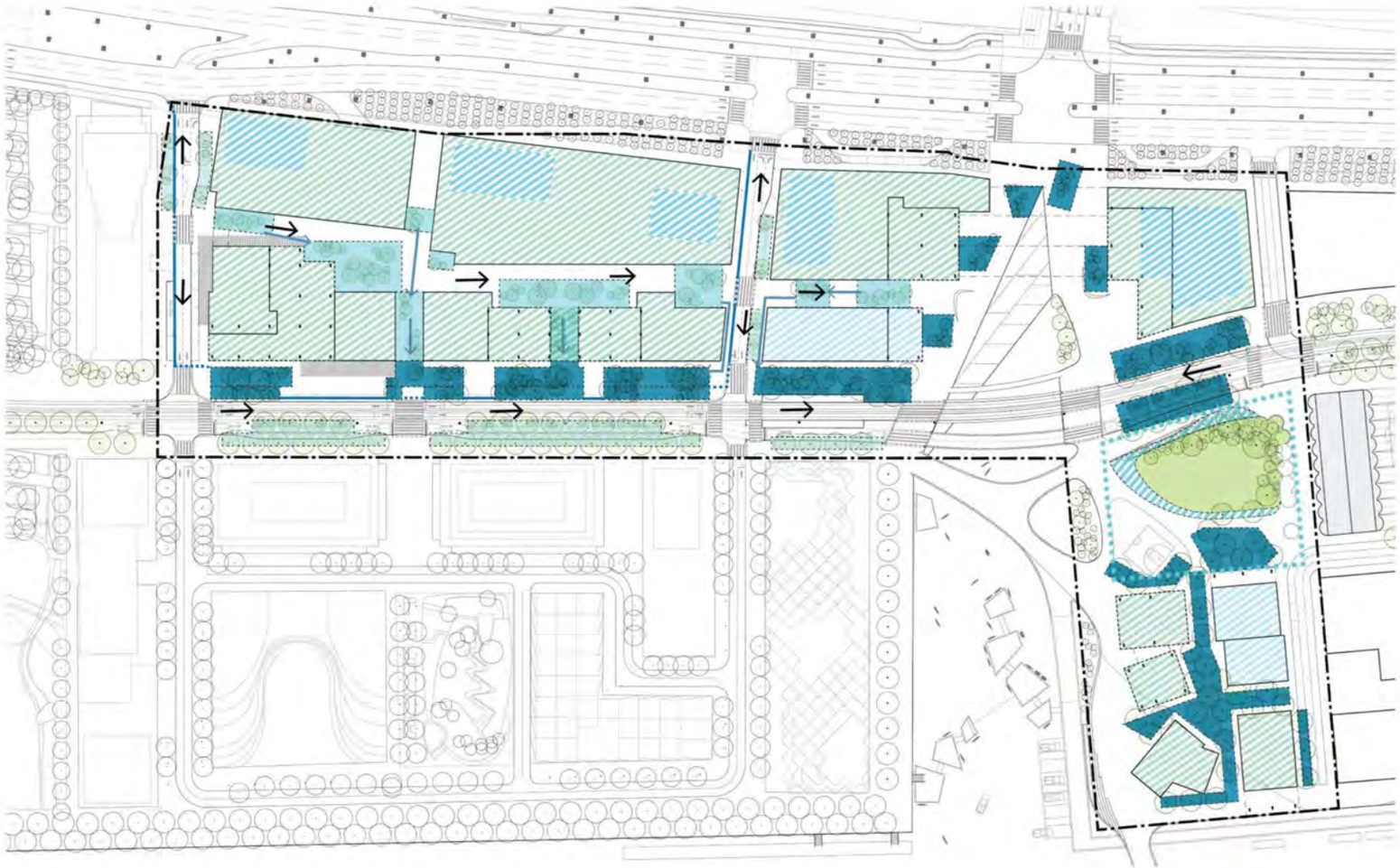
Toronto gets about 10 percent more rain per year than it did in the mid-20th century.



And in the past five years, Toronto has endured two 100-year storms.

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Site Plan of Green Infrastructure for Stormwater and Tree Canopy



Quayside Boundary

Bio-Retention Type1
- mixed open planters and paving on soil cells
- promotes infiltration

Bio-Retention Type2
- planters on podium
- no infiltration
- connected to type 1 where possible for infiltration

Bio-Retention Type3
- street trees in soil cell
- infiltration only possible on small street

30-50% Green Roof

80% Blue Roof

Open Runnel

Covered Runnel (Accessible)

Planted Stormwater Channel

Direction of Overland Flow

Subsurface Connection

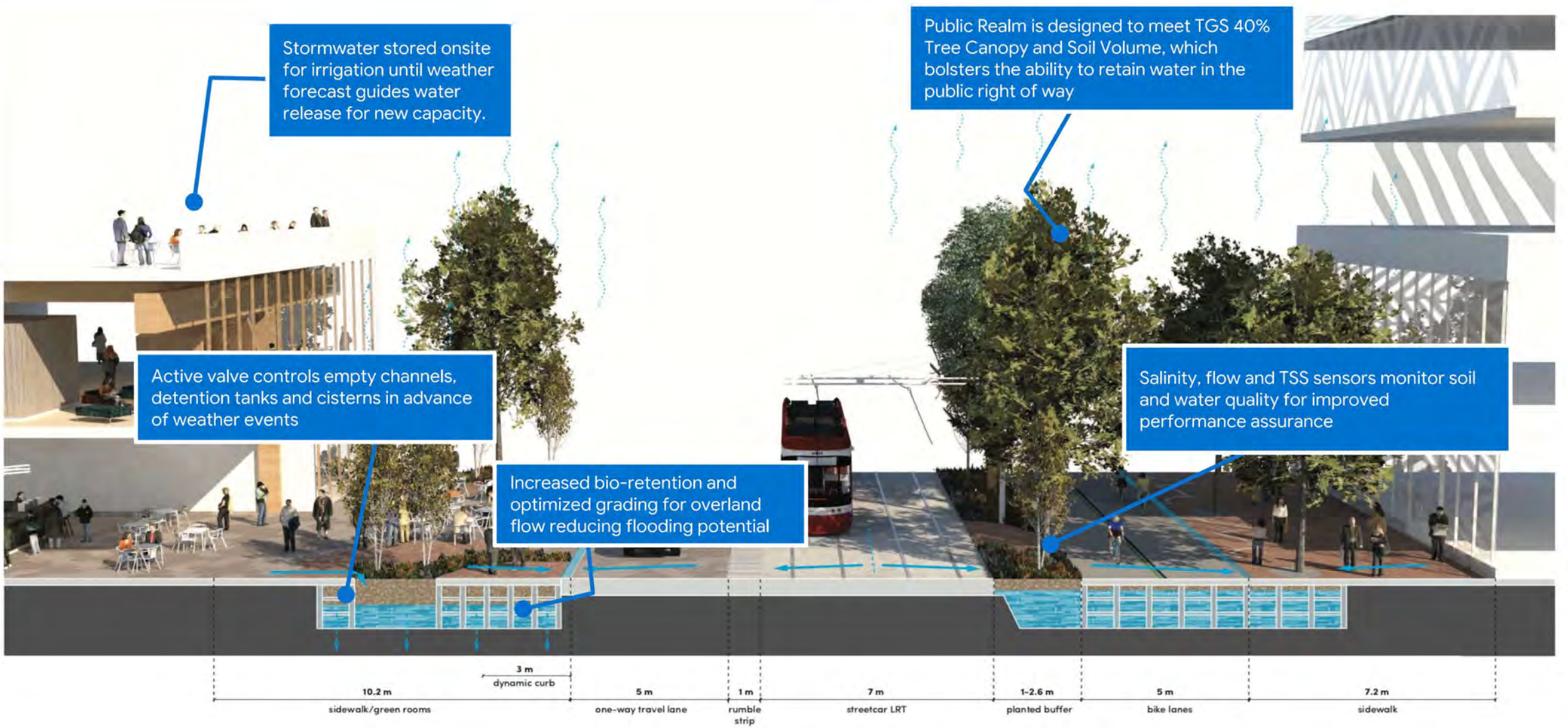
Opportunity for Below Grade Infiltration

N

Scale 1:1000

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Queens Quay East Section of Green Infrastructure



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Strategy to Achieve 80% Diversion from Landfill

Waste characterization at Material Recovery Facility using computer vision



Data analytics on quality of waste streams and common sorting mistakes

Three chutes for recycling, landfill and organics

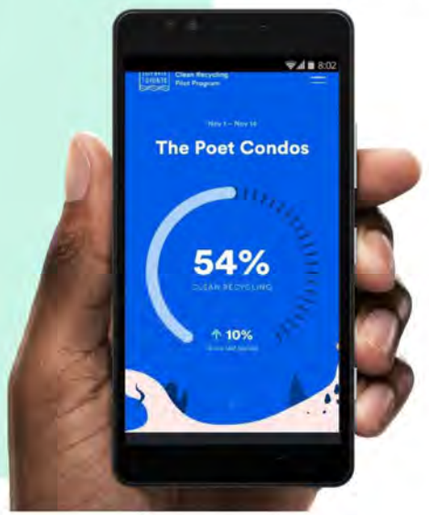
Inlet points in the public realm

Pneumatic conveying system moves waste to a single pick up location, reducing truck emissions and the number of handoffs that can introduce contamination

Volume & Weight sensors measure waste deposit by users

Commodity brokers receive accurate information on waste contents to improve accuracy of valuation

User Interface for education on correct sorting and "pay-as-you-throw" waste charges



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Thank You

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